Whoa! 386 to 486 in 2 Minutes Flat? (p. 56)

AUGUST 1994

PC Computing

Special Issue

1,001 tips

Secrets for **software** success, high-return **hardware** hints, and savvy shortcuts from the **superstars!**

THEY SHARE.
THEY COMPLEMENT
EACH OTHER.
THEY GIVE AND TAKE.

IN THE MICROSOFT OFFICE, S
JUST COHABIT, THEY FORM M

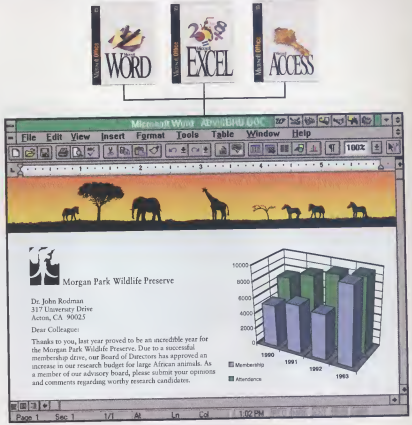
You might say we simply borrowed the idea from nature. Programs that live in the same place should work together.

Consider what you have to do in a single week. Letters. Memos. Reports. Spreadsheets. Charts. Graphs. Presentations. Wouldn't it be great if there were a product that could help you pull it all together?

In a nutshell, that's the idea behind the Microsoft® Office.

Now all your programs can work together like one. Thanks

Now it's simple to combine information from different programs. So you can spice up a flyer with, say, a Microsoft Excel chart.



It's easy to update or manage text, data and graphics in one document with the latest object linking and embedding technology (OLE 2.0). Just click where you need to work and the tools you need are right there.

to our intuitive OfficeLinks tools, you can now share text, data and graphics seamlessly between our best-selling programs.

What's this really mean?

Simply, you'll be able to get more done. With a lot less effort.

Say you're working on a sales report. You'll probably start by writing in Microsoft Word.

Then you click to open your Microsoft Access® database and call up your sales data. By region. By salesperson. By month. By client. By vendor.

But why stop there?

You can easily send that data to a Microsoft Excel spreadsheet in just a click of a button, analyze it, turn it into a dramatic

*Support for Microsoft Office is no-charge; however, normal telephone company charges apply. Microsoft support services are subject to Microsoft's then-current prices, terms, and conditions, which are subject to change without notice and a Mac workstation license (server and software must be acquired separately). In the 50 United States, call (800) 894-6642, Dept. VAC. For information only: In Canada, call (800) 563-9048, outside the U.S. and Canada, call your local
PowerPoint, Microsoft Access and the Windows logo are registered trademarks of Microsoft Corporation

OFTWARE PROGRAMS DON'T
IEANINGFUL RELATIONSHIPS.

chart, and drop it all back into your Word document.

It's like one big technological swap fest. The end benefit being, you can concentrate on your work, instead of your software.

Naturally, you'll want to share your handiwork with the regional managers. Just a couple of clicks later, you've created personalized letters for each one of them from within Microsoft Word. Brilliant.

One final touch. Click a button and transform everything into an eye-popping PowerPoint* presentation. Call it a "career-enhancing" move.

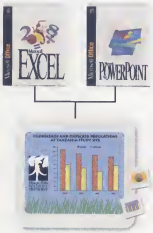
And while we're on the subject of relationships, we should mention the Microsoft Office is the only product of its kind that has unlimited product support with no service charge.*

Clearly, Microsoft Office with OfficeLinks marks a quantum shift in what software enables you to achieve. And it's a clear indication of where the future is heading.

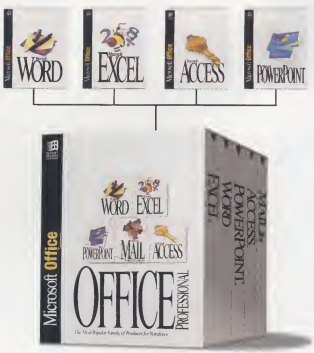
To find out the rest of the story (a small sample of which we've covered here), visit your retailer or call (800) 894-6642, Dept. VAC, for your Office Information Kit.

With the Microsoft Office, you'll not only improve the relationship between your programs, the same will go for you and your computer.

Microsoft Office



Create powerful presentations easily with information from different programs. Suddenly, you're a whiz presenter.

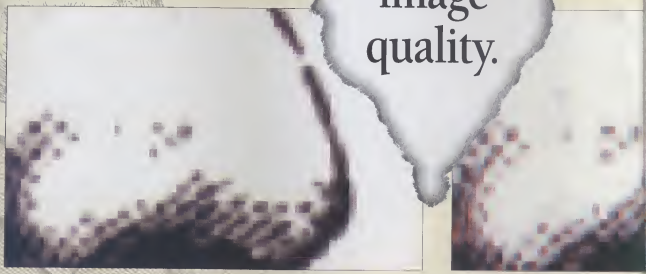


© 1994 Microsoft Corporation. All rights reserved. Microsoft Office Professional, shown here, includes Microsoft Excel, Word, the PowerPoint presentation graphics program, the Microsoft Access database management system. *Microsoft subsidiary or (206) 936-8661. Customers who are deaf or hard of hearing can reach Microsoft text telephone (TT/TDD) services by calling (800) 892-5234 in the United States or (905) 568-9641 in Canada. Microsoft,

Let's talk scanned image quality.

Test 1

COLOR REGISTRATION ACCURACY



MICROTEK SCANMAKER IISP

A good test for RGB color registration is to scan black and white line art in RGB color mode. When magnified and displayed on the monitor you should not see red, green or blue pixels, only gray and black. Microtek's ScanMaker IISP image on the left shows no red, green or blue pixels. Hewlett Packard's ScanJet IIcx, however, shows too many red, green and blue pixels.

BEFORE YOU BUY ANY SCANNER, TAKE A GOOD, HARD

Before you lay down your hard-earned bucks for a single-pass color desktop scanner, here's a simple test you can perform to see for yourself how well it handles color registration.

Scan black and white line art in RGB color mode. Then enlarge and examine the results.

If the colors are properly aligned — or "registered" — the lines will look black. If you see dots of red, green or blue at the edge, the scanner's color registration leaves something to be desired.

SEE FOR YOURSELF

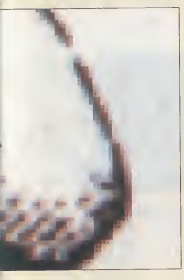
In a recent direct comparison between the Hewlett-Packard ScanJet IIcx and the Microtek ScanMaker IISP, the ScanMaker clearly shows superior color registration. The H-P ScanJet IIcx, well, leaves something to be desired. And because poor registration is only one factor that causes inaccurate color, it further degrades color quality when accuracy problems already exist. So color registration is only one of the quality checks you should be making if you want the best scanner for your money.

Another is color accuracy — how close does the color of the scanned image come to the color of the original? The Microtek ScanMaker IISP uses an award-winning system called Dynamic Color Rendition (DCR) which automatically calibrates and

The scanner to ask for, **Microtek's ScanMaker IISP**, *comes complete with Adobe Photoshop LE for Windows or Macintosh and the DCR color calibration/correction system including software and an IT-8 calibration target. Shown with optional Transparent Media Adapter. Optional Automatic Document Feeder also available.*

Test 2

COLOR ACCURACY



H-P SCANJET IIcx

PROCESS MAGENTA

A WARM RED

MICROTEK IISP

H-P IIcx

MICROTEK IISP

H-P IIcx

Color accuracy is important in most of the images we scan. To test color, we scanned color swatches from an industry standard color-matching system. Once again, Microtek's ScanMaker IISP easily outclassed the well-known ScanJet. The disparity is even more apparent when the Transparent Media Adapter is used. H-P's stationary "light table" light source results in uneven accuracy, while Microtek's moving light source gives consistently more accurate color.

LOOK AT REGISTRATION AND COLOR ACCURACY.

corrects colors to make them virtually indistinguishable from the original.

To prove it, we scanned a 100% magenta color swatch on the ScanJet IIcx and the Microtek ScanMaker IISP. The results, as you can see, show the ScanMaker IISP's color accuracy is superior to H-P — or anyone else. In fact, in a scanner comparison published in the February 8th edition of *PC Magazine*, the editors said, ***"...the ScanMaker IISP's color output was clearly the best of any scanner in our survey."***

PC MAGAZINE EDITORS' CHOICE
February 8, 1994
Microtek ScanMaker IISP

SOMETHING ELSE H-P CANT SAY.

Hewlett-Packard makes some great printers. They also make computers and a host of other electronic equipment.

Microtek makes scanners. Period. In fact, Microtek pioneered desktop scanners. So our history with scanners is longer and deeper than anyone else you can name. Including H-P.

DON'T BUY A SCANNER UNTIL...

If you're considering a scanner — anybody's scanner — don't write the check until you've seen the Microtek ScanMaker IISP. For your free copy of *The Scanned Image* (an easy introduction to scanners), more information or to find out where to see the IISP for yourself, call us at **800/654-4160** or fax a request to 310/297-5050.

MICROTEK

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Before you buy a scanner, let's talk. 800/654-4160

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intel inside

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PC Computing AUGUST 1994 VOLUME 7 NUMBER 8

1,001

Time is money. Knowledge is power. And all four are always in short supply. That's why we've assembled more than 1,000 tips and tricks, including many you won't find in any manual. Whether you're a casual user or an experienced programmer, you'll find plenty of pointers in these productivity gems that will lower your stress level or save you time. So roll up your sleeves and dig in, using the list at right and the index as guideposts to better computing. **106**

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PHOTOGRAPH BY ED KASHI

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tips

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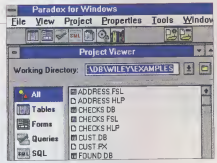

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PHOTOGRAPH BY DAVID PERRY

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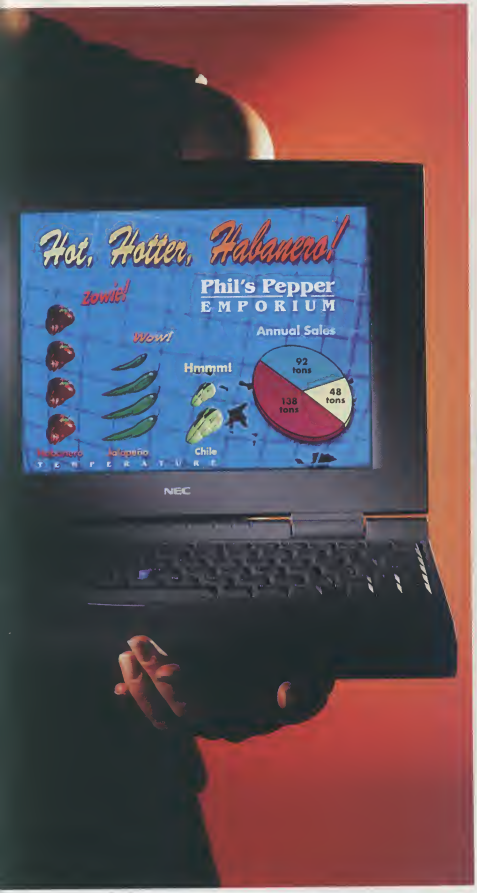

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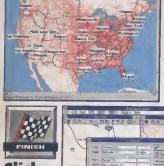

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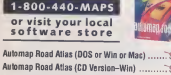

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INTERNET ACCESS It's the world's largest, most complex, and fastest growing storehouse of data. To get you started, we cut through the Internet's jargon, explain the technology, and review several dial-up access packages.

ONLINE SERVICES We've come to love and hate the idiosyncrasies of CompuServe, America Online, and Prodigy. Now we put them through the paces in a face-off that looks at how each service fared in *PC Computing*'s Usability Lab. Find out which will best help you do your job in today's information-rich business environment.

DIALING FOR DATA You may remember your first experience with BBSs for their collections of risqué graphics and discussions between fringe political groups. No more. We show you how raster-image processor graphics, Windows utilities, and neat shareware applications have made BBSs essential sources of business information for the online crowd.

SUPERSYSTEMS There's more to the world than just online data. There is, after all, that box you turn on when you sit down at your desk each morning. Only got a 66MHz 486? Then drool over the latest Pentium systems. They're clocking in at 90MHz. Check our test results to see how the new boxes compare with your existing system in real-world use.

NEW-GENERATION PRINTERS Rich, vibrant color is heading to a workgroup near you. We test ink jet, thermal wax-transfer, laser, phase change, and dye-sublimation color printers to assess the state of the art and determine where these peripherals best fit into your organization.

ALSO NEXT MONTH

Brian Livingston trolls for the latest fixes to Windows. Windows does have flaws, but there are fixes that help improve performance. If Microsoft has updated the driver to your printer or graphic, network, or audio adapter, you'll see improved performance and experience fewer crashes.

You've got to install a new network. The options seem overwhelming. LANtastic? Vines? NetWare? John Montgomery walks you through the decision-making process and details the trade-offs involved.

New! checks out the latest marvels in the world of video conferencing. Color laser printers too new to include in this month's printer feature also undergo our scrutiny. And we see if Lotus Forms will ease corporate developers' fears of creating new Notes databases.

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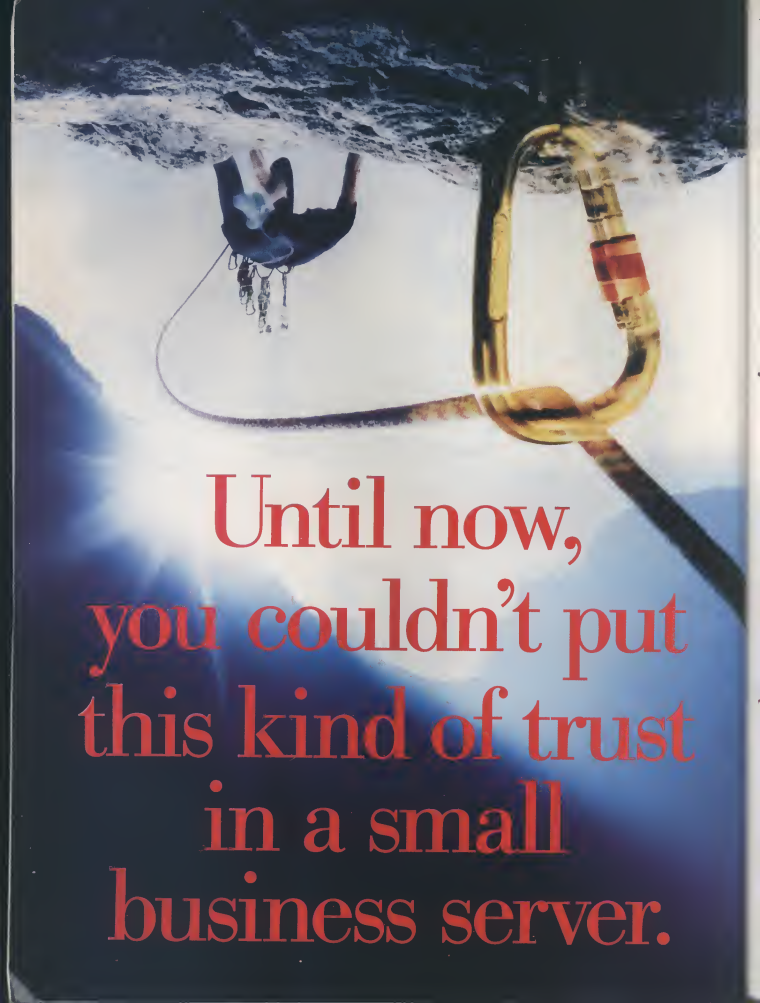
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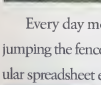

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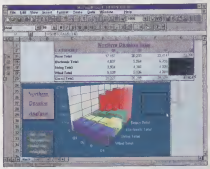

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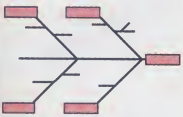

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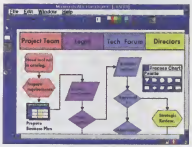

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- PC Magazine, December 21, 1993

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Circle 228 on reader service card.

DOUBLE TROUBLE

Early-Warning System

PC *Computing* is a must-read for people like me who want new product information and explanations of intricate hardware and software technologies. I especially appreciated your May article warning of the difficulties with DoubleSpace in MS-DOS 6.2 (Help, page 174). I haven't used DoubleSpace yet, but now I feel well alerted to its potential hazards. Rarely do I read articles that offer such clear warnings. Thanks for the "public service."

ALLAN C. EMERY III, EMERY@HUSC.HARVARD.EDU

How to Be DoubleSafe

Your May DoubleSpace article overlooks one problem with DoubleSpace: It's an excellent hiding place for boot-sector viruses. DoubleSpace creates two potential virus hideouts. The host drive containing the main files can be infected, and so can the DoubleSpace drive.

Removing most boot-sector viruses requires a clean boot off a noninfected, write-protected system disk, then running a utility like Central Point's DiskFix or Symantec's Norton Disk Doctor to repair the infected partition information. Since the partition table is compressed, the virus's signature is encrypted, thus preventing any virus scanner or repair program from seeing the virus or correcting the partition problem. While the host drive will be successfully cleaned, the virus remains in the compressed file.

The problem is that to access the DoubleSpace drive, the hard disk must be accessed upon boot up. When booting from a noninfected disk with the DoubleSpace driver (DBLSPACE.BIN) installed, DoubleSpace accesses the drive to check for its compressed files. This momentary disk access to the DoubleSpace drive's boot sector is enough to put the virus back in memory and reinfect the host drive.

To stop the hard drive from being accessed when booting from a noninfected floppy, DBLSPACE.BIN needs to be removed from the boot disk. Removing this file leaves the compressed drive inaccessible and therefore impossible to clean. When the DBLSPACE.BIN file is loaded, the computer memory will become infected via the compressed drive and continue spreading the virus. But the disk still cannot be fixed because the virus is already in memory, emulating a perfect partition table. (I've had this problem with a stealth virus called Stoned.Empire.Monkey.)

This is just one more example of why the release of DoubleSpace with MS-DOS is one of the worst things Microsoft has ever done.

TODD GEORGE
QUAKERTOWN, PENNSYLVANIA

WE CHECKED with McAfee, the virus experts. John Young (74403,3170), sysop for CompuServe's McAfee Forum, replies: "The Stoned Virus moves the Master Boot Record (MBR) to another sector on the hard drive, then writes itself where the MBR was. This will make the disk unreadable if the virus is not active in memory. Clean-Up has a /MAINT option to see the partitions and files in spite of the virus. DoubleSpace adds another problem here in that, although Clean-Up can see the partitions, the files are in a format it can't read. The solution to the DoubleSpace problem is to make sure the DBLSPACE.BIN file is on the boot disk. This will allow Clean-Up to read a DoubleSpace drive normally and allow it to clean the virus." **YL**

CD-ROMs for CPAs?

Your cover story on Pentiums ("Pennywise Pentiums," May, page 104) warns against trying to save a few dollars by buying a non-multimedia system. Do accountants really need 16-bit sound cards and dual-speed CD-ROM drives powered by 66MHz Pentiums to crunch numbers? Certainly not. Ironically, if *PC Computing* keeps pushing these systems, you'll help drive down prices of 486 DX2/DX4 systems, thereby benefiting the millions who didn't need multimedia Pentiums in the first place.

SCOTT YORKOVICH
ST. PAUL, MINNESOTA

YOU DON'T NEED to crunch the numbers to figure out that the hottest, fastest machines on the market are now nearly half the price of what they were six months ago. And anyone running complex software applications can realize big usability gains by using increasingly popular multimedia online help systems—or creating custom help systems for their organizations. **RS**

Playing Favorites

While I appreciated your May comparison of PC Tools 2.0 for Windows and Norton Desktop 3.0 for Windows ("Dueling Desktops," page 134), your tests were biased in favor of PC Tools. For example, you mention things that PC Tools has that Norton doesn't (such as MultiDesk), but you don't give Norton credit for having a PIM (which PC Tools doesn't have).

ANDREW S. BAKER
COMPUSERVE 74201,2744

SURE, OUR REVIEW criteria are biased—in favor of those features and specs that are of greatest value to the buyer. If you need a PIM, we think there are really only two

choices. If your needs are light, use your own word processor or spreadsheet. If your needs are industrial strength, you'll want a full-fledged PIM such as Arabesque Software's Ecco Professional, a contact manager, or a sales automation tool. But we see little value in a middle-ground bundleware extra like Norton Desktop's PIM. **JZ**

Just Another Shell Game

Which shell is really fastest: Program Manager, Norton Desktop for Windows, PC Tools for Windows, or Dashboard? As far as I'm concerned, Program Manager takes first place. Desktop shells might look fun with all their bells and whistles, but they already take a heavy toll on the 64K graphics device interface barrier. With desktop shells, you're sure to run out of system resources much sooner than with the plain old vanilla Program Manager.

ALBERT C. ASHTON
BOCA RATON, FLORIDA

Paradise by the Dashboard Light

Hats off to Hewlett-Packard's Dashboard, one of my favorite utilities. I love Quick Launch's single mouse click to launch programs. And if I'm working in Ami Pro and want to extract information from a spreadsheet or calendar, instead of minimizing Ami Pro, I just touch the F12 key to bring Dashboard on top. With extended screens, I can have as many apps open as I like.

RICHARD PARKER
BAKERSFIELD, CALIFORNIA

Emulation Propaganda

Partial information about the PowerPC is terribly misleading. Yes, Macintosh and native applications scream on the PowerPC, but let's get one thing straight: The only DOS/Windows emulation software currently available for the PowerPC reduces its speed to a comparable 25MHz 486SX—a lowly compromise for DOS/Windows users. Even searching through the fine print, I've yet to find any proof that DOS/Windows applications run any faster under PowerPC. Until new emulation software is developed, users will continue to suffer.

CHRIS LIVINGSTON
LAKEWOOD, COLORADO

1001: A Tip Odyssey

My favorite section of *PC Computing* is Help, especially the DOS segment. Over the years, I've gleaned some great tips and tricks for DOS from it. But your June issue neglected to include a DOS section. I'm using DOS 5.0 and planning an upgrade soon. I would appreciate all the tips you can print.

KIRK GARBER
FEDERAL WAY, WASHINGTON

YOU WANT TIPS? You've come to the right place—we offer 1,001 of them in this issue (DOS tips begin on page 108). And no, we haven't eliminated the DOS column and tips from our Help section. We just wanted to see if you were paying attention. **YL**

Why chase a mouse all over your desk?

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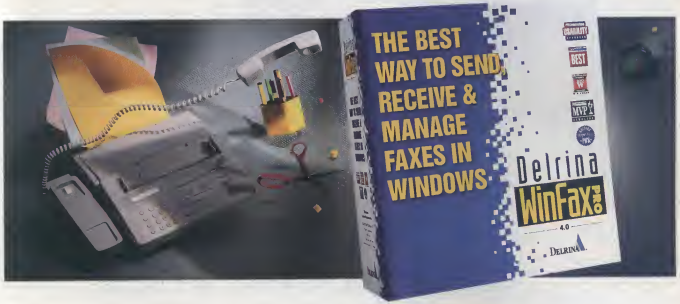
Introducing Delrina WinFax PRO™ 4.0. You'll wonder how you ever faxed without it.



Meet the fastest, easiest, most convenient way ever to handle all your faxing – new Delrina WinFax PRO™ 4.0, the latest version of the best-selling fax software in the world. The only one that combines the advanced faxing features you need with astonishing new ease and usability.

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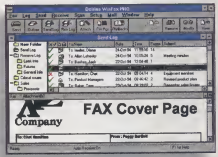
There's added convenience with dozens of ready-to-use cover pages. Fax phonebooks that are drag-and-drop simple. And improved fax annotation tools that even let you add your signature.



Based on extensive usability testing, the new customizable interface includes folders for organizing sent and received faxes.

Don't try this with a fax machine.

Imagine faxing, not just an image of a document, but the actual file itself*, so it's ready to be used in an application. Imagine sending a single document that is automatically faxed to some people and e-mailed to others.

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*Requires Class 1 modem.

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66-MHZ

486 pow•e•r•ful af•ford•able con•ser•va•tion graph•i•cal

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Mail BY PHONE, FAX, NET & POST:
Anagram Funagram • Give Schwartz the Back Page

Penitent Jell

In response to Penn Jillette's column on anagrams for *Uma Thurman* and *Penn Jillette* ("I'll Bet It's Your Damn Thurman Unit Again," April, page 310), I wrote a little program that uses about 250,000 words from Webster's dictionary. Since the anagram problem is factorial in the number of letters, one of the fun parts of writing the program involved finding ways to speed it up. Of several improvements, the most effective was the use of a subdirectory containing only words that might be part of a solution.

Here are some solutions that the program came up with for *Uma Thurman:* Ham Tuna Rum, Human At Rum, Autumn Harm, and Mama Unhurt. Here are some solutions for *Penn Jillette:* Penitent Jell, Pine Jell Tent, Jet Linen Pelt, and Jet Lenten Lip. Finally, here are some solutions for the combination of both names: A Helmet Julep Runt Tinman, A Human Jilt Temper Tunnel, Jail Methane Trump Tunnel, and Injure Lethal Mutt Penman.

JOHN FOWLER
SANTA MONICA, CALIFORNIA

The Good-Humor Columnist

I've been reading *PC Computing* for about a year now, and there's just one little thing that's been bothering me. I have a habit of opening your magazine to the back page for a little humor. So when I open your back page to Jillette's column, I say to myself, "All right. I like this guy. He'll be funny." Imagine my disappointment—although I like Jillette's column, it's just not very funny. Why not put your real humor columnist, Gil Schwartz, on the back page of the magazine?

NANCY MCVICAR
COLUMBUS, OHIO

A Love-Hate Relationship

I'm getting fed up with all the fancy fold-out, yank-out, and throw-out advertisements found on almost every other page in your magazine. I now rip them out and toss them in the trash without even looking at them. They prevent readers from getting what they want, the editorial copy.

And another thing: I refuse to give up DOS in exchange for Windows 4.0. I've noticed that all games for Windows forget to include fun and that all good DOS games simply refuse to run decently under Windows. Besides, it's impossible to do anything (such as deleting one file) quickly in Windows.

JOSH ECKELS
HARTLAND, WISCONSIN

Unsafe at 660MHz

Don't you guys ever edit advertisements? In your May issue on page 283, Worldwide Technologies advertises a 660MHz system. I know there's no such thing, and I'm only 11 years old.

BILLY HIATT
LAGUNA HILLS, CALIFORNIA

HEY, YOU'RE pretty eagle-eyed for a 111-year-old. **JZ**

Corrections

- The Plextor DM-5028 CD-ROM drive ("Best 200," June 1994, page 218) does, in fact, support SCSI-2. This does not affect its rating.
- In our June issue's "Best 200" section on 66MHz 486 PCs (page 112), we cited an incorrect price for Digital Equipment's DECpc LPx 466d2. Based on the correct price of $3,607 for our test configuration, the DECpc LPx 486/66 should have ranked tenth. The other products move up in rank, making Comtrade Electronics' Express VL-Bus Professional 66 the top-ranked system.
- AT&T Direct's telephone number ("Direct 60," July, page 161) is (800) 509-9606.
- The Ecco Professional upgrade mentioned in our July issue (New! page 102) is available to owners of Ecco Professional versions 1.0 and 1.1 only, not owners of competitive products.

SEND YOUR THOUGHTS TO Mail, *PC Computing*, 950 Tower Lane, 19th Floor, Foster City, CA 94404; fax us at (415) 578-7029; contact us via the Internet (76000.21@compuserve.com) or CompuServe (76000,21); or log on to PC Contact to post a public message (see page 234 for instructions). Letters must be signed and include a daytime phone number. All letters become the property of *PC Computing* and will be edited for length and clarity.

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Now you can get all your faxes whenever and wherever you travel. When someone wants to send you a fax, they simply send it to your Delrina Fax MailBox™ — using your own personal 800 fax number which we provide.

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Your presentations will dazzle with rich and vibrant color. Your audience will appreciate the kind of high resolution that makes complex charts and graphs quite readable.

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than an eye-popping screen. This is very much the high performance notebook. It comes with a powerful Intel 486 processor, up to 75MHz. Local bus architecture combined with hardware accelerated graphics deliver up to 16 million WinMarks.

There's also an intelligent power management system inside. So the computer actually adjusts itself to your work habits, taking a breather whenever you do. Battery life is longer than Compaq or Toshiba, from four to eight hours. Or about the length of a Godzilla film festival.

In fact, everything you need to be truly mobile is right here. Even the pointing stick is well positioned at your fingertips. There's also a docking station and PCMCIA slots for expandability. So you can add a modem or LAN adapter to stay in touch with the office or your clients.

Of course, AST includes a 3-year worldwide limited warranty,* with a year of 48-hour rapid repair service.** And our knowledgeable support group is here every day, 24 hours a day, to help you over the telephone.

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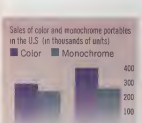
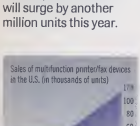
Pulse

The Universal Mailbox, Use as Many Chips As You



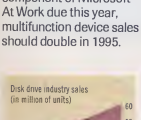
SOURCE: STANFORD RESOURCES INC

Color to Go: Color portables outsold monochromes for the first time at the end of 1993. Overall portable sales will surge by another million units this year.



SOURCE: IBS STRATEGIC DECISIONS

Fax, Print, Chew Gum: With lower prices on the way, and the fax component of Microsoft At Work due this year, multifunction device sales should double in 1995.



SOURCE: DATAQUEST

Disky Business: Despite last year's 16.5 percent increase in disk drive shipments, industry revenues trailed in a price-hacking battle.

LEAVE A MESSAGE

The Modern Mailbox

Before the PC, offices had assistants. Now we have high technology—and the avalanche of e-mail, voice messages, and incoming faxes. Who has the time to dig out from under all that fax paper and to argue with Jane Voicemail?

There is a solution. It's called the universal mailbox, and it's the holy grail of the e-mail industry. Whether it's a software/service combo (from Delrina), a solution that works with an officewide PBX (from WordPerfect), or a new computer that comes with voicemail and fax capabilities out of the box (from Compaq, AST Research, or Hewlett-Packard), there are now ways to consolidate your mail traffic into one handy PC-based front end.

Delrina recently announced its Fax Mailbox service for WinFax Pro 4.0 users: For $9.95 a month (plus a per-page fax charge), users can get their faxes, e-mail, and even voice messages delivered directly to their WinFax Pro mailbox. ConnectSoft, makers of E-Mail Connection, plans to offer a similar service in the future. Modem manufacturers—including Intel and Motorola—are following the trend by embedding voice multiplexing into their modems.

The All-in-One Mailbox: Wired for sound . . . and e-mail . . . and fax capabilities—neatly wrapped in one box.

Offices that already have a PBX-based voice-mail system and an e-mail infrastructure need more advanced products, like WordPerfect's Telephone Access Server for Office (Office is now called Symmetry), which uses text-to-speech conversion to let users dial in for their e-mail and schedule information. And just wait for Microsoft Mail, Lotus Notes, and cc:Mail to transform into universal in-box products. But OCR and voice technology are letting us down: We want the option of reading our

UPDATES Best Bets and Bargains

COREL À LA CARTE
Is CorelDraw 5 overkill? PhotoPaint 5 sells for $199 on CD-ROM ($249 on disk), Ventura 5 (with PhotoPaint and other utilities) costs $495 on CD-ROM ($595 on disk). Call (800) 772-6735.
Reader Service No. 650

FIVE-IN-ONE OMNIFAX
Need to print, receive a fax, and scan a document at once? Omnifax G5 is a $1,995 plain-paper fax modem, printer, scanner, and photocopier. Call Danka at (310) 641-3690.
Reader Service No. 651

WINDOWS ON MONEY
Peachtree Accounting 3.0 for Windows packs 175 enhancements, including inventory functions, LIFO and FIFO costing methods, and PIM features ($169, upgrades $79). Call (800) 221-8330.
Reader Service No. 652

NEW COLOR PRINTERS
Get a QMS magicolor as a $2,499 ColorScript 1000 upgrade, or spend $10,999 for it by itself. Xerox's $8,495 Color Laser Printer hits 1200-by-300 dpi. Call QMS at (800) 523-2696; Xerox at (800) 275-9376).
Reader Service Nos. 653 & 660

PHOTOGRAPH BY GEOFFREY WILSON

Want—They'll Make More, and SCSI Lives!

voice mail and listening to our faxes. And that still seems to be a long way off.

Is SCSI Dead? Enhanced IDE fans are ready to toe-tag the robust-but-pricey SCSI standard. The newcomer promises transfer rates up to 13.3MB per second on drives up to 8.4GB as standard issue on new PCs.

But there's life in SCSI-2, yet: Compaq and Dell are building SCSI-2 adapters into their top-of-the-line desktops. If market pressure from Enhanced IDE finally drives SCSI device prices down, SCSI could come within reach of more consumers.

Intel Outside Chipmaker AMD has pulled a couple of big fish (Compaq and DEC) into its boat, and is cranking out 900,000 486-compatible processors per quarter. Cyrix now has access to IBM's advanced 0.05-micron chip-making process and, as part of the deal, IBM gets to put its label on the Cyrix production. What's this mean? Far wider selection of PCs and processors and lower PC prices.

Burnin' up the Wires We barely had the time to enjoy 14.4Kbps, now we're careening toward V.Fast 28.8Kbps. The standards committees haven't even caught up. The V.Fast protocol won't be approved before the third quarter, but US Robotics is introducing V.Fast modems for $100 less than 19.2Kbps V.terbo versions.

Half a Gig to Go How'd you like to lug 680MB in your laptop? MiniStor Peripherals plans a 2.5-inch IDE drive of that size by the third quarter, with 340MB and 510MB drives available even sooner. Expect Maxtor and Integral to follow suit.

Chicago: Taking Care of 32-Bitness

Here's how Microsoft will pull us into Chicago: The Redmond leviathan is approaching big names like WordPerfect, Corel, and Adobe to sign them up for the **First Wave program,** which would make sure their applications showcase Chicago's best features. What does that entail? OLE 2.0, Plug-and-Play event handling, support for long filenames, and 32-bit operation. And a ship date within 90 days of Chicago's release.

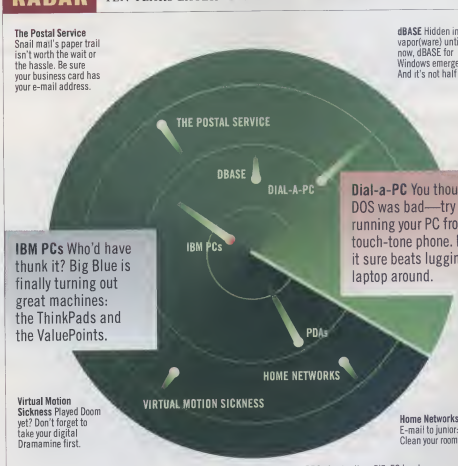
Look Sharp!

Our informal study reveals the best prices for these presentation graphics programs as of 5/20/94. All prices subject to change.

Product	List	Best
Aldus Persuasion 2.1 *Bulldog (800) 438-6039*	$495	$329
Lotus Freelance Graphics 2.1 *Elek-Tek (800) 395-1000*	$495	$339
Micrografx Charisma 4.0 *CompUSA (800) 451-7638*	$495	$341
Microsoft PowerPoint 4.0 *Egghead (800) 344-4321*	$495	$339
SPC Harvard Graphics 2.0 *MicroWarehouse (800) 367-7080*	$395	$279

Reader Service Numbers: Bulldog *654;* Elek-Tek *655;* CompUSA *656;* Egghead *657;* MicroWarehouse *658*

RADAR TEN YEARS LATER—BIG BLUE AND DBASE ARE BACK



The Postal Service Snail mail's paper trail isn't worth the wait or the hassle. Be sure your business card has your e-mail address.

dBASE Hidden in the vapor(ware) until now, dBASE for Windows emerges. And it's not half bad.

Dial-a-PC You thought DOS was bad—try running your PC from a touch-tone phone. But it sure beats lugging a laptop around.

IBM PCs Who'd have thunk it? Big Blue is finally turning out great machines: the ThinkPads and the ValuePoints.

Virtual Motion Sickness Played Doom yet? Don't forget to take your digital Dramamine first.

Home Networks E-mail to junior: Clean your room.

PDAs Apple slices PIE, EO bombs, Compaq scraps its PDA prototype.

What's on the scope? If it's near or moving toward the middle, pay attention to it. If it's moving off the screen, forget about it for now. Your time is too valuable.

Fast New Spins On Old CDs

You've heard all about zero-to-500Kbps quad-speed CD-ROM drives. Seen any yet? Except for promises, we've seen only a few external drives—Pioneer's multidisk changers and NEC's MultiSpin 4XPro (see "Ultimate CD Solutions for Insatiable Appetites," June, page 214)—and only one internal drive: **Plextor's 4Plex**, a half-height SCSI drive with a 1MB cache.

More speed from existing hardware? Chicago's **32-bit CD-ROM file system (CDFS)** reads double-speed and faster drives more efficiently than before—even in the beta copy we are evaluating. When CD developers catch on to the new **AutoPlay** feature, even loading CDs will be quicker: Slip one in a drive, and it plays.

Plextor / (408) 980-1838 /$549
plus $50 interface
Reader Service No. 659

Contributors to Pulse: Mike Hogan, George Meier, Raphael Needleman, Shyamala Reddy, Chris Sandlund, and Rich Schwerin. Edited by Matthew J. Lake

A Paler Shade of Green

When Energy Star systems didn't spark corporate interest, Green-PC vendors asked why. The verdict was unanimous: network shortcomings. When you power down network interface cards (NICs), you're off the network. The workaround? New **deep green** systems designed around **system management mode–based CPUs,** to be released this fall.

Even then, the core problem remains: keeping networked PCs under the **Energy Star 30-watt limit** when the average NIC sucks 10 watts all by itself. Even the EPA's Energy Star office isn't sure whether its new network PCs meet the spec. Adding Ethernet to the motherboard of new Dell and Wyse PCs, along with AT&T's creative power management (which works with NICs), will help. For now, Energy Star is a real **1.0 standard:** Great idea, try again.

SOFTWARE SALESWIRE

CENTRAL POINT'S **PC TOOLS 2.0** CRACKS THE TOP FIVE

BUSINESS APPLICATIONS	Vendor	Price	Comments	APRIL	MAY
Excel 5.0 for Windows	Microsoft	$495	Visual Basic customization within macros.	3	1
Word 6.0 for Windows	Microsoft	$495	Drag and drop your entire office.	1	2
WordPerfect 6.0	WordPerfect	$495	Custom graphics and page mode.	5	3
FoxPro 2.6 for Windows	Microsoft	$495	Powerful 32-bit database solution.	-	4
Access 1.1 for Windows	Microsoft	$495	Export data to Word's Mail-Merge format.	-	5

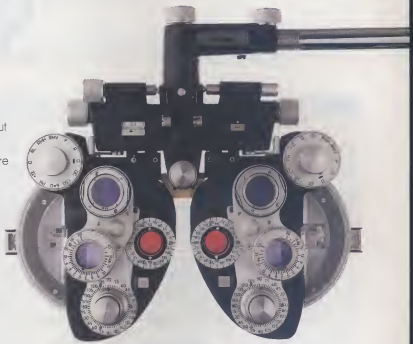
UTILITIES	Vendor	Price	Comments	APRIL	MAY
MS-DOS 6.0	Microsoft	$78	Three straight months in the top slot.	1	1
Windows 3.1	Microsoft	$149	Easy file and desktop management.	2	2
QEMM 7	Quarterdeck	$99	Supports more TSRs and drivers.	3	3
NetWare 3.*x* (5-user license)	Novell	$1,095	Multiclient-friendly for distributed apps.	4	4
PC Tools 2.0 for Windows	Central Point	$149	CrashGuard protects system resources.	-	5

PERSONAL PRODUCTIVITY	Vendor	Price	Comments	APRIL	MAY
Quicken 7 for DOS	Intuit/ChipSoft	$69	Measure investment activity 14 ways.	1	1
Money 3.0 for Windows	Microsoft	$35	Three banks support Bank On-Line.	6	2
Quicken 3.0 for Windows	Intuit/Chipsoft	$69	Drag and drop daily transactions.	2	3
InfoCentral 1.0 for Windows	WordPerfect	$139	Relational PIM links separate data.	-	4
Print Shop Deluxe 1.2	Broderbund	$49	Robust import/export, countless layouts.	5	5

Software Saleswire is compiled by G. Meier, Inc., once each month after gathering ranked-order sales information supplied by the following software industry sources: 800-Software, ABCD Distributors, American Software, Bebbwagon, Baker & Taylor Software, CompUSA, Computability, Computer Discount Warehouse, Corporate Software, Duston Discount Software, Egghead Discount Software, Electronics Boutique, Data/FA, GTSI, Ingram-Micro, Jesha Distributing, Kenfil, Lasak Int'l, Merisel, Multiple Zones, Navarre, PC Connection, Software Resources, Software Spectrum, Software, Etc. and Wholesoftware. They represent sales through tens of thousands of resellers and more than $4 billion of software sales. A weighting system is applied to each entry based on three factors, the entry's position in the individual chart, the power of the contributing source based on annual gross sales, and the relative strength of a source in a given category of software. All prices are suggested retail and are subject to change.

PHOTOGRAPH BY GEOFFREY NILSON

GET THE ULTIMATE 17" MONITOR WITHOUT PAYING THROUGH THE EYES.



For many, a 17" monitor represents a step up in size, but not necessarily a step up in image quality. Unless you are stepping up to the new Nokia Multigraph™ 447X.

First there is the crispness of its .26mm aperature grill. When presented in its maximum resolution of 1600 x 1200, you enjoy a working environment of phenomenal richness, clarity, and detail. Invoke the maximum refresh rate of 120 Hz, and you possess a screen so stable it appears frozen in time. And when you select Nokia's exclusive MicroEmission™ option, this exquisite display represents the most user-sensitive 17" monitor in the world—easily surpassing the rigorous health and environmental criteria of TCO*, and sparing your eyes the strain of hours spent in front of a lesser system. You will also be acquiring conveniences like on-screen adjustments for 19 different user-defined preferences, including FullScreen™ borderless display. You should find the price fits comfortably with your preferences as well.

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447X—17"	120Hz	120Hz	90Hz	80Hz	75Hz	67Hz

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The ZEOS® Pantera™ Simply Can't

EXPERTS NAME THE ZEOS PANTERA #1

"Rocket fast performance and a great price make this our favorite Pentium of the lot," *PC/Computing* said.

Top computer experts at five leading publications agree that the ZEOS Pantera is the best Pentium-processor based system available.

The ZEOS Pantera has earned:

- *PC Magazine* Editors' Choice (April 12, 1994)
- *Computer Shopper* "top choice" (April 1994)
- *PC/Computing* BEST (May 1994)
- *PC World* Best Buy (June 1994)
- *Windows Sources* Experts' Pick (June 1994)

These prestigious awards all add up to one thing–ZEOS computers are your #1 choice.

Don't settle for less. The Pantera has it all. *PC/Computing* concurs: "Hot performance, room for expandability, and a low price make this system our top choice."

POWER BEYOND POWER

"At the top is the new ZEOS Pantera-66, a Pentium-66 that recorded the fastest benchmark results ever to come out of the PC World Test Center," reported *PC World.*

PC Magazine said: "ZEOS Pantera-66 combines quality features, good price, and high performance.... A consistently above-average performer on all our benchmark tests...."

The ZEOS Pantera received the highest marks on many benchmark tests including the important Graphics WinMark and Disk WinMark tests run by *PC Magazine.* In fact, its Disk WinMark surpassed the next closest competitor by 35 percent!

What makes the Pantera fly at supersonic speeds? A ZEOS designed motherboard with exceptional features such as a hot new integrated PCI Local Bus IDE Controller (supporting up to four IDE devices) that, as *PC Magazine* said, "pushes disk access into new territory."

PENTIUM & 486 PANTERAS

Even better, we now incorporate the latest award-winning Pantera technology (including PCD to our 486 PCs. The expanded Pantera line includes more processors–from a 486SX-25 to a DX4-100 all the way to a Pentium-90! The best news: The Pantera DX4-100 *just* earned *PC Magazine*'s Editors' Choice (June 28, 1994).

These new, improved and even more affordable systems feature local bus IDE hard drives from 214MB to 1GB; memory from 4MB to 24MB; a new 64-bit video controller; 3 PCI slots (one contains our PCI local bus video card) in addition to 5 ISA slots; and on-board Fast SCSI-2 option. And all Pantera systems are 100% compatible with every major network operating system on the market.

ALL THE EXTRAS INCLUDED

What's more, we give you all this at a marvelous price. There's no doubt about it. *PC/Computing* said: "We suggest you spend your money on this machine–it offers the best value of any system we tested." *Windows Sources* agrees: "ZEOS Pantera offers the best performance for the price."

The value doesn't stop with your purchase. You get the best service and support in the business. In fact, ZEOS has won more *PC Magazine* Readers' Choice for Service & Reliability awards than any other company–five in all. And we were the first to provide 24-hour toll-free technical support–every day!

ZEOS offers you all this and more. It's easy to see why the Pantera is the "number one power desktop Best Buy." It's the Editors' Choice. Make it your choice. As *PC/Computing* said, "there's no doubt which machine you should choose: ZEOS's Pantera...this is a deal you simply can't pass up." Call your ZEOS Systems Consultant now at 800-554-5218.

"This Is A Deal You Pass Up." —*PC/Computing* BEST, May 1994

PROCESSORS	PACKAGE 1	PACKAGE 2	PACKAGE 3	PACKAGE 4
486SX-33	**$1495** Lease $63/mo.	**$1845** Lease $67/mo.	**$2245** Lease $81/mo.	**$2795** Lease $101/mo.
486DX-33	**$1645** Lease $60/mo.	**$1995** Lease $72/mo.	**$2395** Lease $87/mo.	**$2945** Lease $107/mo.
486DX2-66	**$1745** Lease $63/mo.	**$2095** Lease $76/mo.	**$2495** Lease $90/mo.	**$3045** Lease $100/mo.
DX4-100	**$1995** Lease $72/mo.	**$2345** Lease $85/mo.	**$2745** Lease $99/mo.	**$3295** Lease $108/mo.
PENTIUM-66	**$2195** Lease $79/mo.	**$2545** Lease $92/mo.	**$2945** Lease $107/mo.	**$3495** Lease $115/mo.
PENTIUM-90	**$2395** Lease $87/mo.	**$2745** Lease $99/mo.	**$3145** Lease $104/mo.	**$3695** Lease $122/mo.
More processors available. Call for details.	■ 4MB RAM	■ 8MB RAM	■ 16MB RAM	■ 24MB RAM
STANDARD WITH EVERY ZEOS PANTERA® SYSTEM	■ 214MB local bus IDE hard drive w/32K cache	■ 528MB local bus IDE hard drive w/256K cache	■ 720MB local bus IDE hard drive w/128K cache	■ 1GB local bus IDE hard drive w/256K cache
■ Genuine Intel Processor.	■ 3.5" 1.44MB floppy drive	■ 2X CD-ROM drive, 3.5" 1.44MB floppy	■ 2X CD-ROM drive, 3.5" 1.44MB floppy	■ 2X CD-ROM drive, 3.5" 1.44MB floppy
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■ Two high-speed serial ports and one enhanced parallel port.	■ ZEOS 14" 1024 x 768 non-interlaced SVGA color monitor, .28mm dot pitch	■ ZEOS 14" 1024 x 768 non-interlaced SVGA color monitor, .28mm dot pitch	■ ZEOS 14" 1024 x 768 non-interlaced SVGA color monitor, .28mm dot pitch	■ ZEOS 14" 1024 x 768 non-interlaced SVGA color monitor, .28mm dot pitch
■ Three PCI slots and five ISA slots.	■ Six-bay desktop case with two cooling fans	■ Six-bay desktop case with two cooling fans	■ Six-bay desktop case with two cooling fans	■ Six-bay desktop case with two cooling fans
■ Optional on-board Fast SCSI-2 socket.	■ MS-DOS 6.2, Windows for Workgroups 3.11, Microsoft Mouse	■ MS-DOS 6.2, Windows for Workgroups 3.11, Microsoft Mouse	■ MS-DOS 6.2, Windows for Workgroups 3.11, Microsoft Mouse	■ MS-DOS 6.2, Windows for Workgroups 3.11, Microsoft Mouse
■ Flash BIOS.			■ Choice of Lotus Windows application	■ Choice of Lotus Windows application
■ 200 watt power supply with built-in surge suppressor. Switchable between 115/230V.				
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intel inside

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- Integrated business audio.

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Circle 248 on reader service card.

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"At the top is the new ZEOS Pantera-66, a Pentium-66 that recorded the fastest benchmark results ever to come out of the PC World Test Center."
PC World, Best Buy, June 1994

"ZEOS Pantera-66 combines quality features, good price, and high performance..."
PC Magazine, Editors' Choice, April 12, 1994

"We suggest you spend your money on this machine--it offers the best value of any system we tested...this is a deal you simply can't pass up."
PC/Computing, BEST, May 1994

"...one system stands out from the rest: the ZEOS Pantera."
Windows Sources, Experts' Pick, June 1994

"The ZEOS (DX4) offers top performance at a good price."
PC Magazine, Editors' Choice, June 28, 1994

How can you miss when so many experts agree? The ZEOS Pantera is the top choice. Make it your choice. Call a ZEOS Systems Consultant today.

PC MAGAZINE EDITORS' CHOICE
June 28, 1994

DX4-100 ..... $2895

- Intel 100MHz DX4 processor
- 16MB RAM, 256K SRAM cache
- 528MB local bus IDE hard drive with built-in 256K cache
- 2X CD-ROM drive, 3.5" 1.44MB floppy disk drive
- Diamond Stealth 64/PCI local bus SVGA color graphics card with 2MB VRAM
- ZEOS 14" 1024 x 768 NI SVGA color monitor, .28mm dot pitch
- 2 serial ports, 1 enhanced parallel port
- 3 PCI slots, 5 ISA slots
- On-board SCSI socket
- Flash BIOS
- 6-bay desktop case with two cooling fans
- 101-key space-saving keyboard
- MS-DOS 6.2, Windows for Workgroups 3.11, Microsoft Mouse, choice of Lotus application

PC WORLD BEST BUY
March 1994

486DX2-66 ..... $2545

PC at left modified to include:

- Intel 66MHz 486DX2 processor
- 8MB RAM, 256K SRAM cache
- ZEOS 15" 1024 x 768 NI SVGA color monitor, .28mm dot pitch
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PC MAGAZINE EDITORS' CHOICE, PC WORLD BEST BUY & COMPUTER SHOPPER'S "TOP CHOICE"
April 12, 1994 June 1994

PENTIUM-60 ..... $3145
PENTIUM-66 ..... $3195
PENTIUM-90 ..... $3395

- Intel 60MHz, 66MHz or 90MHz Pentium processor
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- 528MB local bus IDE hard drive, 256K cache
- 2X CD-ROM drive, 3.5" 1.44MB floppy disk drive
- Diamond Stealth 64/PCI local bus SVGA color graphics card with 2MB VRAM
- ZEOS 15" 1024 x 768 NI SVGA color monitor, .28mm dot pitch
- 2 high-speed (16550) serial ports, 1 enhanced parallel port
- 3 PCI slots, 5 ISA slots
- Integrated business audio
- On-board SCSI socket
- Flash BIOS
- 10-bay vertical case with two cooling fans
- 101-key space-saving keyboard
- MS-DOS 6.2, Windows for Workgroups 3.11, Microsoft Mouse, choice of Lotus application

PC/COMPUTING BEST & WINDOWS SOURCES EXPERTS' PICK MULTIMEDIA SYSTEM
May 1994 June 1994

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Circle 265 on reader service card.

Paul Somerson

E-Mail Bonding

The news just gets stranger every day. Someone sees a stain on a wall resembling a religious icon and the faithful **SWARM** to worship it. Rush Limbaugh marries an aerobics instructor who once **FLAMED HIM** on CompuServe. And you can't get too much more bizarre than the nutso tales of Lorena, Tonya, Lyle and Eric, Gennifer, and others known by their first names, but whom you personally wouldn't want to know on a first-name basis.

However, here's some truly oddball news: One of the Great Problems of the Communications Universe is about to be solved by . . . IBM. If you recall, IBM's previous communications entry was Prodigy, a **WADDLING GOBBLER** they ought to deliver with cranberry sauce.

IBM's new effort, called Intelligent Communications, is an electronic **EMANCIPATION PROCLAMATION** that frees users from slavery to their phones, faxes, and e-mail. Due in early 1995, it's a universal mailbox complete with intelligent agents called Alter Egos that learn how you work and streamline all your voice, fax, paging, and private/public data needs.

Whoa . . . Hold on . . . If your eyes glaze over at the sound of this, it's understandable. Clanky **PATCHWORK SOLUTIONS** have been around for ages, but they've invariably fizzled. A few exceptions, like the slick Symmetry (formerly WordPerfect Office), AT&T's PersonalLink, and the fledgling Delrina/MobileComm venture, are impressive but deliver only pieces of the puzzle. IBM promises to Do It All.

Intelligent Communications will handle any hardware from desktops to notebooks to phones to fax machines to PDAs, wireline to wireless. It'll deal with the **INSANE MULTIPLICITY** of maddeningly unintuitive online interfaces.

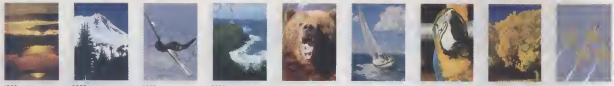
It can send someone an executable form-based "actor" that interviews the recipient interactively just as a human assistant would. And since all incoming information funnels through your Alter Ego, which filters, prioritizes, and forwards just the right stuff, you'll never miss an important message. Or log onto ten different services hourly to see if there's anything hot waiting for you. Or drown in the unsolicited electronic gorp of **JUNK DATA**.

These guys have really thought it out. They've constructed **FIREWALLS** to protect sensitive data from aggressive outside agents. They've built in protection against chaotic **"MAILSTROMS"** that could result when agents trigger each other to respond in mad exploding loops. They've even made it smart enough to "deconstruct" newspaper pages into columns that will be readable on tiny palmtop screens.

They insist that from beginning to end it will be a **DELIGHTFUL EXPERIENCE.** When's the last time you heard those words in the same breath with voice mail, fax, and e-mail?

This is a tall order, but with more than 200 top IBM engineers cranking to get it done, it has a real shot. Yeah, it's still vapor, but I want it. I need it. Sign me up.

PHOTOGRAPH BY JAMES McGOON



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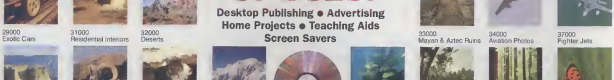

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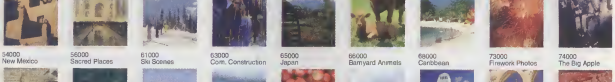

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COREL

Circle 180 on reader service card.

Ed Bott

Seismic Software

Bolt down the office furniture. Stock up on bottled water. Get ready to duck and take cover. There's an earthquake coming, and its epicenter will be in Chicago. Not the city, of course. I'm talking about the next version of Microsoft Windows, which will soon shed its code name, Chicago, and acquire a new retail identity more fitting for the mass market. It doesn't matter whether its technology is earthshaking. Chicago will rearrange the PC landscape, and when the dust settles, anyone planning to buy hardware or software will need a brand-new road map to get around.

Techno Tremors In the hardware world, Plug and Play is the only smart choice for buyers, seismically speaking. With Chicago's active support, Plug and Play sends IRQ, DMA, and DIP to the TLA graveyard, and not a moment too soon. You're almost better off to do without than to buy a non–Plug-and-Play PC or peripheral this year. And if the PC you need now doesn't include a Plug-and-Play BIOS, at least insist on a BIOS in rewritable flash ROM so you can upgrade it later.

The original Plug-and-Play system, Apple's Macintosh, is sitting on shakier ground. In business, it's now best known as "that computer we bought because the art department insisted on it." First-time PC buyers, especially the ones with school-age kids, are deserting the Mac in droves and buying Packard Bells, Presarios, and ValuePoints—whatever's on the shelf at Circuit City. They'll find the new Chicago-equipped PCs irresistible.

Over on the software side of town, the big, big winners will be the marketing executives, who may briefly feel like defense contractors when they see their budgets for 1995. Let's do the math: Say Chicago will sell, oh, two or three jillion upgrades next year, give or take a few million. Even if only half of those upgraders will be primed for new applications, that works out to . . . well, let's just round it to bazillions of dollars in upgrades, all coming out of our pockets. History says that many of those initial releases will be quick and dirty translations of old applications. Don't let the 32-bit hype stampede you into a premature, unproductive purchase.

Fortunately, the second wave of new applications—the ones that take advantage of Chicago features like extended file attributes and multithreading—will begin arriving late next year, which is why the big software losers, at least in quality-of-life terms, will be the developers. If you can write Windows code, you can write your own ticket—if you're willing to live by the philosophy, "There'll be plenty of time to sleep when we're dead." Of course, we won't care; we'll be wondering how to fill the hours we used to spend tweaking INI files and managing memory.

Aftershocks A few parts of the personal computing landscape will be hit harder than others. If your business computing foundation is IBM's OS/2, you're in for a hard year. Big Blue can't compete with Microsoft's OEM contracts, which guarantee that Chicago will come preinstalled on nearly every PC that's sold next year, including many of IBM's. That means you'll have to work harder just to install OS/2 in the first place. And no matter how hard you look, you'll be hard pressed to find OS/2 applications in the year of Chicago.

CHICAGO will shatter the landscape of operating systems . . . When the DUST SETTLES, hardware and software BUYERS will need a new ROAD MAP to get around.

The Internet will also be rocked to its foundations, thanks to Chicago's improved communications and built-in support for TCP/IP. For the first time, you won't need to be a networking expert to connect to the Net. There were howls of protest last year when America Online unleashed 600,000 Newbies onto unsuspecting Usenet newsgroups. Just wait till millions of wide-eyed Chicago users get unlimited access. Researchers and businesspeople who rely on the Net to tie their working lives together will lose bandwidth and productivity when the Chicago shock waves arrive.

Some of the software boxes that tumble off your bookshelves won't be worth picking up again. In Chicago, for example, there's no need for memory managers like QEMM, Windows shells like Norton Desktop, or real-mode utilities of any kind.

Of course, that leaves a lot of room on the shelves for new products. And don't be surprised to see the number 95 on many of them. Microsoft has already thrown its weight behind a proposed hardware logo called PC '95; the idea is to help you see at a glance whether or not a new system has what it takes to run Chicago right. Over in Microsoft's applications wing, the Chicago upgrades to Word 6.0, Excel 5.0, PowerPoint 4.0, and Access 2.0 are all covered under the working name Office 1995. Would anyone care to wager that Chicago will wind up with a catchy, consumer-oriented name like Windows '95?

Like the real-life Big One, there's no telling in advance exactly when the Chicago quake will hit. But one thing's for sure: Every buying decision you make next year will be affected by the aftershocks.

PHOTOGRAPH BY JAMES McGOON

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John C. Dvorak

Chip Shots

It was the second day of Computex '94, the big computer show in Taipei, and time for the industry roundtable—a special event for members of the international media. The topic: microprocessor alternatives. Representatives of Cyrix, AMD, IBM, Motorola, Texas Instruments, Novell, Microsoft, and most Taiwanese hardware makers were on hand. Intel was supposed to be there but stiffed everyone. Even without Intel, a storm was brewing.

The roundtable took place in a room similar to the one you see on that PBS show where a lawyer taunts a bunch of muckety-mucks about various social and political issues. I think it's called *Taunt the Muckety-Mucks*. Unfortunately, at this event the lawyer was missing and the event was too civil. Still, you got a feeling for the battle to come: the Intel x86 architecture versus the PowerPC. That was the real theme behind the roundtable and the theme at the trade show where the massive IBM PowerPC booth competed for attention with the massive Intel booth.

Cyrix, Texas Instruments, and AMD paid little attention to this competition, having already banked on the x86 architecture. There was open talk about the Cyrix M1 chip, which will compete head-on with the Pentium. Cyrix folks were bragging about how, with IBM making the Cyrix chips now, it was obvious that IBM would use the M1 as "their Pentium solution" and as a hedge in case the PowerPC doesn't set the world on fire. AMD was talking openly about its K5, K6, and K7 chips, which will compete with the Pentium, P6, and 786 (P7) from Intel. "Talk is cheap," said a Cyrix salesman. "Look at our numbers and compare them to Cyrix," said an AMD executive. I caught David House, V.P. at Intel, in the lobby of the Grand Hyatt hotel, and he laughed with contempt when I mentioned AMD and Cyrix.

This is more like it! Now the industry is getting interesting again. But why do I have to go to Taiwan? Where's the action in the U.S.A.? There isn't any from what I can tell. Anyway, let's look at the battle that's heating up for our dollars. Intel is quietly confident that the PowerPC will not take the world by storm. It has a litany of reasons, and at the top is the installed base of applications and the fact that any x86 emulator running on the PowerPC will be so slow it will kill interest in the PowerPC. This point was highlighted by the news that Apple was disappointed in the new version of the PowerPC designed for laptop use—the 603—because the emulator was a pig on the chip due to some cache design. The emulator controversy came up at the roundtable when a reporter from India ranted about how Indian coders can do good emulators and the PowerPC folk are idiots for not exploiting them.

THE BATTLE *for our dollars is heating up . . .* **THE INDUSTRY** *is interesting again . . . But why do I have to go to* **TAIWAN?** *. . . Where's the* **ACTION** *in the U.S.A.?*

The emulator issue will soon become a nonissue because by the time PowerPC comes out, the battle between Intel, Cyrix, TI, and AMD will have pushed DX2 chip prices so low that you will be able to buy a dirt-cheap add-in card for the PowerPC that incorporates a 66MHz or 80MHz 486 and runs native code. If the add-in card can run off the PowerPC's main memory, then it will be almost free because the 486 chips will be priced like jelly beans by the end of the year.

The strategy of adding an entire CPU subsystem to a new architecture is nothing new. A few months after the IBM PC was introduced in 1981, a product came out called the Baby Blue. It was an add-in card with a Z80 and some memory that let you boot and run CP/M programs. It was a hardware bridge that let you keep your favorite old apps while migrating to the new platform. There's no reason this won't repeat itself. It's a cheap way to go and there's no performance hit unless it's compared to a Pentium or a P6.

So this brings us back to the roundtable discussion. I noticed the x86 vendors were defensive. "The x86 has proven itself." "The x86 has a long life ahead." Nobody said it, but you knew they wanted to believe that this is the architecture for all time. The IBM and Motorola representatives were smug and talked about the future, not the past. Microsoft didn't care; it had already convinced the Taiwanese that Windows NT on the PowerPC would be the standard. All the PowerPCs in the back rooms were running Windows NT. A big shot from Mitac told me, "In Taiwan we subscribe to the Microsoft strategy."

Anyway, while the x86 vendors are a little nervous, I believe the bonanza they all hope for is a certainty because they'll sell those cheap x86 chips into both the PC and the PowerPC markets. There's no doubt that for the first two years almost every PowerPC machine will come with an x86 chip as an add-in. Of course the irony is that by doing so, they're signing their own death warrants. The transition will end the reign of the x86 and the PC will degenerate into a $400 two-chip home/game/CD-ROM machine at best. The final irony is that this was the fate of the PC from the beginning, when it was released as a cassette-oriented home computer.

PHOTOGRAPH BY JAMES McGOON

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Gil Schwartz

Color Me Happy

It all started with the Spofford presentation. Spofford is our consultant. He replaced nearly a dozen marketers, strategic planners, and accountants, and makes only about twice the amount of their total annual salaries. He came in last month to give us the results of a research blitz he had conducted in our Southeast region. The data wouldn't interest you. It barely interested me. I had to poke myself with a plastic coffee swizzle stick several times, quite painfully, to keep my retinas from fusing shut. Content aside, the presentation was a real eye-opener.

Presto. He set up his new color laptop in front of my boss Walt and ran through the show. Boffo color overheads. A slide show with no slides. We spent not a single second thinking about the information. That was pretty cut and dried. But the oohs and ahs about those graphics! And I had to admit it: The whole package was designed to highlight the packaging and avoid any undue attention to content.

And that's what business is all about.

Walt called me in right after the meeting, sat me down, and peered at me with his potent executive Supervision. I felt my skin heating up quite uncomfortably. Walt's gaze does that to people. At last, he strode to the window and surveyed his fiefdom to its horizon. I waited.

"I've always thought of you as ahead of the curve," he said.

"I am, Walt," I said. "I absolutely am."

"How come we never have cool overheads like that?" he inquired in a deceptively mild tone. I knew that inside, he was in a lather of acquisitiveness.

"I thought you were happy with what we had, Walt," I said.

"I was. Now I'm not. I want that Spofford thing. Whatever it was, get it for me."

"It's gonna cost you, Walt. Software and hardware. We're talking upgrade here."

"Fine," said Walt. "Go for it."

First, of course, was the presentation package itself. Until now, the demand had been mostly for black-and-white overheads with high resolution, mostly text with a couple of clean 3-D financial charts. For that job, Ventura Publisher, with imported text from WordPerfect, had served me since the late 1980s. Now the game had changed.

I spent a moment considering Microsoft PowerPoint, which has its moments, producing excellent fountain fills and good, solid textures in its backgrounding. But I never really took to it, you know?

Programs are like people. Some you may like a lot but never become friends with. Others annoy you but you end up spending your life with them and are content.

I thought about, but immediately thrust from me, Lotus Freelance Graphics for Windows, which excels in ease of use but offers some of the ugliest layouts since our accounting department started experimenting with Harvard Graphics 1.0.

Finally, I settled on Aldus Persuasion. OK, it's not that easy to use. It can be maddeningly slow at times, particularly during transitions. But its backgrounds are lascious, its charts incorporate seamlessly into the body of each slide, and its handling of text is nonpareil. Once you learn its crinks and wobbles, you can produce the kind of slide shows that make executives sit up and holler, "Hey! Howdja do that?!" no matter how atrocious in human or financial terms the story you're telling may be.

Finally, the **BIG DUDES** *are getting it—the future is too* **AWESOME** *to be rendered in* **BLACK AND WHITE.** *So don't be blue. Bring on the green and let the* **GOOD TIMES** *roll!*

I found myself whistling and humming just a tad while I whipped up my show. I knew how it was going to go over, that's why: I was going to knock their socks off. I imagined them with their socks off. It was a good feeling. Chuckling, I programmed the transitional wipes and dissolves, then moved the entire thing over to my NEC Versa laptop, which was made to deliver these types of extravaganzas. I had one final choice to make: Should I exhibit my output onscreen, clicking from one slide to the next with my wireless mouse like a virtual David Copperfield? Or should I plop my new PanelBook 550 from In Focus Systems down on the LCD of my laptop and project the results up on the big screen (*pow*)? I decided on the former, but brought along the latter. I always remember my Boy Scout oath, particularly when there are executives around.

I had the first chance to use it in our monthly operating review. In the past, I would have simply drawn up a number of attractive overheads for our mutual consumption. This time I had my fabulous twenty-first century presentation on hand. The numbers, I should say, are much better this year than they have been at any time during the 1990s, and should remain so until Alan Greenspan has his way with the economy once and for all. So everyone was in a mucho festive mood anyhow. But the kudos for the new graphic look were considerable. Our CFO, in fact, slapped me on the back and chortled, "Whoa! You're a one-man information superhighway!" It was a great moment.

Then Walt struck.

"Now let's see these on paper," he said, preparing to stalk from the room.

". . . paper?" I said.

PHOTOGRAPH BY JAMES McGOON

Look for us on all the major networks.

Word about PCs from Hewlett-Packard is getting around, and ratings are soaring. According to a recent CRN/Gallup survey, "Use of HP desktops in Fortune 1000 companies has doubled in the last year."[1]

And with good reason. Our broad range of PCs not only meets users' expectations for power and ease of use, it also answers the needs of a network manager. With built-in features like on-board networking, advanced security and asset tracking, HP PCs have what it takes to be top performers on virtually any network. And soon our expertise in network management will reach all the way to the desktop, as we continue to pioneer the development of DMI (Desktop Management Interface).

For more information or the name of your nearest HP dealer, call us today at 1-800-322-HPPC, Ext. 8324. And tune in to the network superstars.

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Give your other PCs something to look up to.

If you're connecting PCs to a network, scan this chart and you'll see it's time to hook up with HP.

STANDARD NETWORKING FEATURES	HP VECTRA M2 PC	COMPAQ DESKPRO/XE	DELL NETPLEX
Advanced Bus Architecture	VL-bus		
Integrated Networking Interface	16-bit		
Integrated, multiprotocol Boot-ROM	X		
ISA Plug-n-Play Compliant	X	X	
Multilevel Security Features	X	X	X
Asset tracking	X	X	
PC tattooing	X	X	
Optional Desktop Management Software	X		
Bi-directional parallel port	X	X	X
Desktop Management Interface (DMI)[2]	X		

HP quality in value-priced PCs.

- *Intel 486SX, 486DX2 and DX4*
- *Chip upgrades to higher performance*
- *On-board accelerated local-bus video*
- *210-MB hard drive*[1]
- *4-MB RAM, expandable to 64-MB*
- *512-KB or 1-MB of Video RAM standard*
- *ISA Plug-n-Play compliant*
- *Desktop Power Management*
- *EPA Energy Star certified*

High-performance network-ready PCs in a slimline package.

- *Intel 25- and 33-MHz 486SX, 50- and 66-MHz 486DX2, upgradable to Pentium Overdrive*
- *Optional 128- or 256-KB second level cache*
- *170-MB, 14-ms Fast-IDE hard drive*
- *32-bit Fast-IDE local-bus hard disk interface*
- *4- or 8-MB RAM, expandable to 96-MB*
- *Ultra VGA2 local-bus accelerated video supporting up to 1280 x 1024 resolution*

High-performance PCs for the connected office

- *Intel 33-MHz 486SX, 50- and 66-MHz 486DX2, 100-MHz DX4, upgradable to Pentium Overdrive*
- *Optional 128- or 256-KB second level cache*
- *Four mass storage shelves; four expansion slots*
- *One available 32-bit VL-bus slot*
- *210-MB, 14-ms Fast-IDE hard drive*
- *32-bit Fast-IDE local-bus hard disk interface*
- *8-MB RAM, expandable to 96-MB*

Top performance for experts in connected environments.

- *Intel 60-MHz Pentium with 256-KB write-back cache*
- *One PCI slot, one shared PCI/ISA slot, two ISA slots*
- *Four mass storage shelves*
- *270-MB Fast-IDE hard drive with 12-ms access time*[1]
- *Integrated S3 928PCI graphics accelerator*
- *2 MB of VRAM expandable to 4 MB, 1600 x 1200 video resolution*
- *8-MB RAM, expandable to 192-MB*

HP Vectra VL2

- *Local bus Fast-IDE hard disk interface*[4]
- *1280 x 1024 video resolution*[4]
- *Optional 128- or 256-KB cache memory*[4]
- *Free three-year limited warranty for parts and labor*[2]

from
$1,099[1]

HP Vectra N2

- *1 MB of video RAM standard, expandable to 2 MB*
- *Slimline package with two mass storage shelves and three ISA slots*
- *Optional integrated 10Base-T networking*
- *Multilevel security*
- *EPA Energy Star certified*
- *ISA Autoconfiguration utility (Plug-n-Play)*
- *Integrated Desktop Management Interface (DMI)*[3]
- *Free three-year limited warranty for parts and labor*[2]

from
$1,309[1]

HP Vectra M2

- *Ultra VGA2 local-bus accelerated video supporting up to 1280 x 1024 resolution*
- *Optional integrated 10Base-T networking*
- *Systems Diagnostics Utility*
- *EPA Energy Star certified*
- *ISA Autoconfiguration utility (Plug-n-Play)*
- *Integrated Desktop Management Interface (DMI)*[3]
- *Free three-year limited warranty for parts and labor*[2]

from
$1,679[1]

HP Vectra XP

- *Integrated 16-bit 10Base-T networking interface with bus-master DMA*
- *Flash EPROM*
- *Systems Diagnostics Utility*
- *Power-on Self Test*
- *Multilevel security*
- *Asset tracking with non-erasable serial number and customizable PC tattooing*
- *Bi-directional parallel ports*
- *Free three-year limited warranty for parts and labor*[2]

from
$3,559[1]

intel inside

yes NetWare tested and Approved

All HP Vectra PCs come with MS-DOS® 6.2 and MS Windows for Workgroups 3.11 pre-installed. HP mouse and keyboard included. [4]Feature included with some models. [1]List price, dealer prices may vary. Monitor not included. [2]Other capacities available. [2]First year on site, 24-hour service. Second and third year return to dealer. [3]Available 8/1/94. [4]With permission CRN/Benchmark. MS-DOS is a U.S. registered trademark and Windows is a trademark of Microsoft Corporation. Pentium and the Intel Inside logo are U.S. trademarks of Intel Corporation. PPG403 ©1994 Hewlett Packard Company

New! Paradox 5.0 for Windows

New Paradox Packs a Punch

Borland's Paradox for Windows has always been a bruiser of a database. Powerful, stocky, and none too subtle, it left poseur programmers staggering. But in the hands of an experienced developer, it could pack a wallop.

With Version 5.0, Paradox for Windows is an all-around better product: more trim, more powerful, and easier to use. Like Microsoft Access and Lotus Approach, Paradox for Windows now includes interactive online helpers—Borland calls them Experts—to build complicated forms and reports with just a few button clicks. While they're similar to Microsoft's Wizards, Experts offer a few more advantages. For example, Experts contain more forms and reports than Wizards do and they show you a preview of sample output so that you'll have less backpedaling to do if you choose the wrong option while building a table.

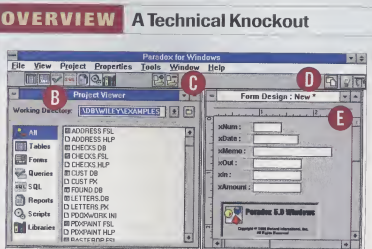
Learn by Doing Paradox has also leveled its learning curve with the addition of Tutors—similar to Access's Cue Cards—a collection of 15 interactive tutorials that explain everything from creating a table to sorting a report. Tutors have their limitations, though. They load slowly, and there are no Tutors for Paradox's programming language, ObjectPAL, or for the more advanced features of Paradox.

Perhaps the biggest injection of usability comes from Paradox's redesigned online help. Previous versions made you search through ObjectPAL help or general help—but when looking for a topic you couldn't search both simultaneously. Now you can search the entire manual in one fell swoop. Better yet, once you find what you're looking for in ObjectPAL help, Paradox lets you copy and paste the sample code directly into your own methods.

Paradox's new interface is also a notable improvement over previous versions. In addition to redesigning the menus, Borland has fixed Paradox's awkward folder organization, doing away with the single clunky folder that held a mishmash of all tables, reports, queries, and forms in a single window. Like Access's reorganized Database Window, Paradox's Project Viewer automatically catalogs all tables, queries, forms, and reports, and tucks them neatly into their own icon-identified folders.

Slim, Fast No longer the memory hog of old, the new Paradox is leaner and quicker. While you won't be satisfied running it on a 4MB system, you'll be completely comfortable running Paradox on an 8MB machine. Screen redraws are snappier, and tables open

OVERVIEW A Technical Knockout



A. Paradox features **integrated SQL tools** for enhanced database connectivity. You can enter SQL statements directly into Paradox.

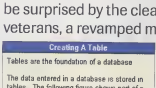
B. The biggest improvement over Paradox 4.5 is in the interface. The superslick **Project Viewer** neatly catalogs all of your database components.

C. Get to the things you need faster. Paradox's revamped **SpeedBars** now feature filter buttons. And the Query SpeedBar features a handy button for instant sorts.

D. **Tutors and Experts** hold your hand while you undertake complicated database tasks.

E. Say good-bye to boring forms. Paradox's souped-up **Forms Designer** provides great-looking forms so that you can concentrate more on the data than the design.

Power-Packed with a Smile: If you found the interface in previous versions less than elegant, you'll be surprised by the cleaned-up Paradox 5.0. For veterans, a revamped menu puts options where you'd most expect them. For ObjectPAL developers, new debugging tools help make prototyping a breeze. And for beginners, interactive Tutors help you learn the basics of databases.



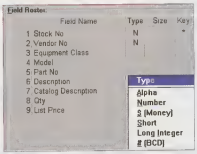
USABILITY: *With Experts, Tutors, and new online help, you'll never be in the dark about database design.*

PERFORMANCE: *Previous versions have been plenty fast. We did not benchmark this beta release.*

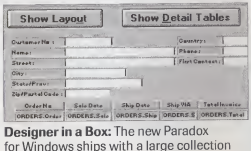
TECHNOLOGY: *Great workgroup features (OBEX), powerful programmer's environment, complete language.*

VERDICT: *Paradox is technically sophisticated and outclasses others in raw power, but it isn't as easy to use.*

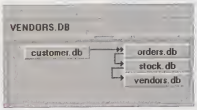
GUIDED TOUR UNRAVELING THE PARADOX



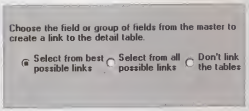
Fields of Dreams: Paradox supports the widest array of field types you're likely to find in a database. You can easily define a field type by selecting it from a convenient drop-down list.



Designer in a Box: The new Paradox for Windows ships with a large collection of great-looking form styles. The Design Layout screen lets you choose a look for the general layout of your form—before you fine-tune your application.



Drag-and-Link 'Em: Use the data model tool to define table links. The double arrow indicates a one-to-many relationship, while the single arrow indicates a one-to-one link.



Easier Relationships: Paradox now comes with a Forms Expert that intelligently guesses which links are appropriate for your table. You can then define those links by simply clicking on a button.

quickly on a 66MHz 486. One of Paradox 4.5's most irksome qualities seems to have been fixed as well: In previous versions, Paradox consumed—and never gave up—gobs of Windows resources. Paradox 5.0 for Windows is much kinder and gentler, freeing resources once its done with them.

Paradox 5.0 should also be faster. While we did not benchmark the beta version reviewed here, Borland claims that Paradox 5.0 runs queries and reports up to three times faster than Version 4.5. It's also supposed to compile Object-PAL code more quickly.

Borland's object exchange groupware solution (OBEX) allows users to share tables, queries, and other Paradox objects through a Publish and Subscribe metaphor. Say you frequently run a query on sales per state. You can publish the results and set up recipients to receive the query through any of the common mail transports, standard network connections, or even MCI Mail. OBEX handles the mailing and updating of information. It's a good platform for building custom workflow applications.

And this version has a completely integrated version of InterBase—Borland's interpretation of client-server architecture. With the implementation of IDAPI (Integrated Database Application Programming Interface), Borland's answer to ODBC, Paradox 5.0 users will be able to access information from multiple vendors' back-end databases. While Paradox is now easier to use in almost all respects, it is still, at heart, a tool for serious developers. And Version 5.0 is pumped up in this regard with a better Integrated Development Environment (IDE) that has more than 100 new methods, plus 200 new properties, a better debugger, and more database field types.

But don't be daunted by the high-end features of Paradox 5.0 for Windows. While it packs all the power a superdeveloper could ask for, it has plenty of padding for the bantamweight programmer. JOHN TASCHEK

FILEBOX

Paradox 5.0 for Windows

System Requirements: 6MB of RAM, 386 or better, Windows 3.1.

Recommended Configuration: 486 or higher with 8MB of RAM.

Hard Disk Space Required: 13MB minimum, 15MB with full installation.

The Competition: More powerful than Microsoft Access, but not as easy to use as Lotus Approach.

Network Features: Borland's IDAPI integration is complete. Paradox now has better SQL access to nearly every database on the planet.

$495, regular; $895 for the runtime plus developer's tools; $199, upgrade
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ValuePoint 100DX4/Dp

IBM Drives a Dual Bus Solution

USABILITY: *Accessible sockets make it an upgrader's dream.*
PERFORMANCE: *Blows DX2s out of the water.*
TECHNOLOGY: *The best solution yet to the PCI vs. VL-Bus conundrum.*
VERDICT: *Innovative yet safe.*

We forgive you, IBM. We forgive you for the Micro Channel architecture. We forgive you for the PCjr. It took your desktop division a while to see the light, but your new ValuePoint 100DX4/Dp proves that you've finally learned how to give customers what they want.

What separates the ValuePoint 100DX4/Dp from the competition is IBM's solution to the PCI vs. VL-Bus dilemma. While the motherboard is based on VESA's VL-Bus, IBM figured out an intelligent way to support PCI as well, using a swappable backplane into which you plug add-in cards.

The VL version of the swappable backplane adds one VL-Bus slot and four ISA slots. The PCI backplane has room for two PCI cards and two ISA cards. And, for maximum flexibility, you can also get a backplane that supports five ISA cards.

Saving Slots While the VL version of the ValuePoint's backplane has room for only one VL card, this is not a major snag, because both video and hard disk controllers are already integrated onto the motherboard's VL-Bus.

The 64-bit S3 video processor comes with 1MB of dynamic RAM (DRAM) that's upgradable to 2MB. The Enhanced IDE controller supports up to four 1GB hard disks, or three hard drives and a CD-ROM drive.

IBM also includes 256K of write-back cache and 8MB of RAM standard, expandable to 128MB. The ZIF socket will support the P24T Pentium upgrade chips when they're available.

The ValuePoint ran through our performance tests at the same rate as Compaq's Deskpro XE 4100, a VL-Bus machine. It ran slower than Zeos' PCI-based 486-100. As you might expect, this machine toasts the 66MHz 486s DX2s available on the market.

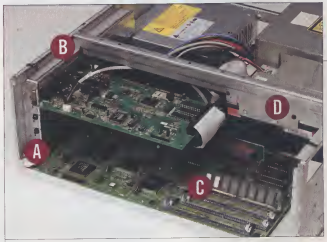
Take the plunge and pay the $119 extra for 2MB of video controller DRAM. Tests show a 6 percent improvement in video scores with extra memory.

Price Point The ValuePoint is priced competitively with the Deskpro XE 4100, and both systems offer nearly identical performance. But the numbers don't tell the whole story.

Despite its rather unattractive exterior, the interior layout of the ValuePoint should be appealing to anyone who has ever had to manage an officewide PC upgrade campaign: All of the ValuePoint's upgradable components—which include the SIMMs and video DRAM—are easily accessible, with the exception of the awkwardly situated ZIF socket that sits directly under the hard drive.

However, because you'll want to upgrade your system RAM before the processor, the ValuePoint 100DX4/Dp design is better than the Deskpro's, which has its SIMMs tucked under the drive bays.

And, of course, you get the flexibility of opting for VL-Bus or PCI expansion slots; both Compaq and Zeos lock you into one of the two standards. **CHRIS SANDLUND**



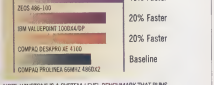
A. Video and hard-disk controllers are integrated onto the motherboard's VL-Bus . . . .

B. So you're left with one free VL-Bus slot, or two open PCI slots, depending on which backplane you plug in.

C. Well-placed memory and video DRAM modules allow for easy access to these frequently upgraded components.

D. Our only gripe: The ZIF CPU socket is practically inaccessible.

New Chips, Same Results: The ValuePoint 100DX4/Dp is the only 100MHz DX4 desktop to use a clock-doubled 50MHz chip instead of a clock-tripled 33MHz part. While the ValuePoint doesn't top Zeos's PCI-based 100MHz 486, it turns in respectable scores for a DX4—which means it will make you forget about any DX2 systems you have lying around.



NOTE: WINSTONE IS A SYSTEM-LEVEL BENCHMARK THAT RUNS 12 OF THE MOST POPULAR WINDOWS BUSINESS APPLICATIONS

FILEBOX

ValuePoint 100DX4/Dp

Configuration Tested: 100MHz 486 DX4, 16MB of memory expandable to 128MB, 540MB hard drive, integrated Enhanced IDE hard drive controller, integrated S3 Vision 864 video processor, 2MB of video DRAM (ships standard with 1MB), Panasonic dual-speed CD-ROM drive, Media Vision Audio Spectrum 16 sound card.

$4,542 with 17-inch monitor
IBM PC
(800) 426-2968
Reader Service No. 602

PHOTOGRAPH BY JIM CARRIER

New! HARDWARE:
Ambra N75T and AST Ascentia 900N

Light and Loaded on the Road

USABILITY: *The N75T's keyboard is light to the touch.*
PERFORMANCE: *Ascentia's battery life is impressive.*
TECHNOLOGY: *The N75T has built-in sound.*
VERDICT: *Ascentia sports more muscle—and a higher price.*

The trick is not cramming a 75MHz CPU into a notebook computer—Intel's technology makes that easy for AST and Ambra. The trick is getting one of these beauties through central purchasing. If you can, here's what awaits you: a fast machine (probably faster than your desktop PC) that weighs less than seven pounds, runs for at least two hours on batteries, has a removable hard drive, and maybe a built-in sound chip.

Sitting Pretty Both of these machines are worth the arguments with the budgeteers. AST's $5,849 Ascentia 900N—which replaces the company's flagship PowerExec series—comes with a brilliant 10.4-inch active-matrix color display, as well as local-bus video and a welcome (if overdue) "eraser-head" pointing device mounted in the middle of the G, B, and H keys. It weighs slightly more than 6.5 pounds.

Despite the name change, the Ascentia retains the PowerExec's svelte 8.5-by-11.5-by-1.6-inch dimensions, user-upgradable RAM (8MB expandable to 32MB), and removable hard drive (510MB). There are two easily accessible Type II PCMCIA slots. Also, the machine's self-training power-management routine has been fully automated, eliminating all but one manual setting—Max Battery—which turns the display off and sends the machine into suspend mode after a user-defined period of inactivity.

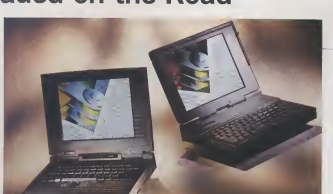
We had mixed feelings about the Ascentia's "smart" power management. While it does make for a hassle-free machine with a battery life that's twice as long as the Ambra, it could prove problematic if you want to use peripherals, such as external network adapters that require you to disable your notebook's power management capabilities.

But the biggest improvements are in the luxurious 10.4 inches of thin film transistor (TFT) display real estate and the new Lexmark keyboard. The Hitachi screen is superb—bright with richly saturated hues. Despite undersized function keys and short key travel, the keyboard provides a thoughtful layout and soft, crisp response. We hope the forthcoming 100MHz version will include an integrated sound chip or multimedia docking station . . . and a lower price.

Pay Less Ambra's $4,229 N75T also features an active-matrix display, a removable hard drive, two Type II PCMCIA slots, and an excellent near-center-mounted trackball—as well as a sound chip. Although it's smaller than the Ascentia's display, the N75T's 9.5-inch display is equally bright and vivid.

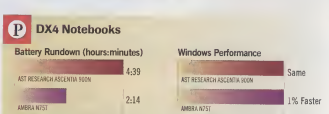
The keyboard sits 3.25 inches from the front of the unit, providing a built-in wrist rest. Keyboard layout is good despite undersized function keys that are crammed too far to the back of the unit. Key response is soft, but we liked it. The large trackball, positioned just below the space bar, is one of the best we've seen that doesn't come on a PowerBook.

What to Buy For squeezed budgets, the N75T presents a fine alternative to the Ascentia. It comes with less memory (4MB, expandable to 20MB), a smaller display, and less drive capacity (only 340MB), yet it provides excellent usability, solid performance, long battery life, and a shrewd design. And its built-in sound chip (with microphone and phone jacks on the back) augur the future of portable computing. Other portable peddlers should take note. **MARTY JEROME**



High Usability: Both AST's Ascentia 900N (right) and Ambra's N75T (left) boast big and beautiful active-matrix displays and 75MHz DX4 power. We really liked the small usability details, like the Ascentia's eraserhead pointing device and the Ambra N75T's trackball and wrist rest.

Rising to the Top: These machines are equally fast, but battery lives are different. The Ascentia chugged away almost twice as long as the Ambra—and even lasted longer than the ThinkPad.



FILEBOX

Ambra N75T

Configuration Tested: 75MHz 486 DX4, 4MB of RAM expandable to 20MB, 340MB hard drive, built-in sound.

Weight: 6.8 pounds.

$4,229
Ambra Computer Corp.
(800) 252-6272
Reader Service No. 603

Ascentia 900N

Configuration Tested: 75MHz 486 DX4, 8MB of RAM expandable to 20MB, 510MB removable hard drive.

Weight: 6.5 pounds.

$5,849
AST Research
(800) 876-4278, (714) 727-4141
Reader Service No. 604

PHOTOGRAPH BY ARNOLD TOSKEJO

I don't understand

my new healthcare plan,

Latin,

my parents,

how tofu can be so popular,

why athletes make

more money than doctors,

why everybody makes

more money than me,

and why anyone would buy

an NEC SuperScript™ 610 printer.

Why? Because it's the fastest and easiest personal laser printer you will ever use.

Besides you're smart enough to recognize a good idea when you see one. You're not afraid of new technology. And you're definitely tired of waiting every time you print from Windows.

But still you have your doubts. What exactly is this new technology? And what's in it for you?

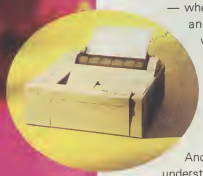
Well, it's called GDI printing and it works like this. GDI (Graphical Device Interface) is the native language of Microsoft Windows.™ Because the SuperScript 610 thinks and speaks the same language it doesn't have to translate or reformat your documents before it can print. Which means it's 30% to 300% faster than ordinary printers. And what you see on the screen is truly what you get.

Okay, this is obviously a great Windows printer. But can it print PCL and DOS? Of course. As long as you open the application from within Windows. There's even a $99 PostScript™ option if you need it.

With all this sophisticated technology, you'd expect the 610 printer to be complicated and hard to use. But it's actually much easier to use than ordinary printers. And it only takes minutes to install.

To achieve this kind of ease we did have to eliminate a few things, however. Like the controller. Why have one when the PC can do the file processing? It's faster and more efficient. It also allows you to print fonts and graphics without any limitations. And every time you upgrade your PC, you automatically upgrade your printer.

We also moved the operator panel to the PC screen — where it belongs. That way graphical displays and animated icons can show you exactly what's going on at all times.



By the way, the SuperScript 610 is extremely compact, 300 dpi, prints 6 pages per minute and it comes with a 2-year overnight replacement warranty.

And it costs under $500. What's so hard to understand about that? For more information, call 1-800-NEC-INFO or for details via fax, call NEC FastFacts™ at 1-800-366-0476, and request document #SW610.

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NEC

Circle 219 on reader service card.

Seiko's Two-for-One Sale

Double the technology should mean double the fun. But in the case of Seiko's Professional ColorPoint 2 PSF, it's really double the trouble. This unusual printer combines two color-printing technologies—dye sublimation and thermal wax-transfer—into one box. It's designed to save you money; the rationale being that dye-sublimation printouts, while beautiful, are very expensive for proofing ($8 to $10 for a page). Instead, you want to proof your work using a less costly printer technology (thermal wax-transfer) before you run off your final pages. If you use thermal wax-transfer technology for proofing and save your dye-sublimation output for final color matching, you'll save a bundle.

Easier Said than Done

Putting two printers in one $16,499 box means you don't have to sacrifice desk real estate, and there's no need to monkey around with parallel cables, network connections, or Windows setup to print between two printers. While it's a great idea, Seiko's solution misses the mark in usability.

First, you have to handle two color rolls, one for each technology. Although swapping out color rolls is a breeze—each roll is mounted on a special 12-by-18-inch tray that lifts out of the printer—only one roll fits in the printer at a time. And the trays for the color rolls are not clearly marked. (Of course, you can put a simple "thermal wax-transfer" label on one tray and a "dye sublimation" label on the other to clear up any confusion.)

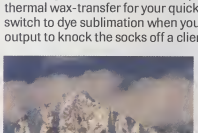
While the lack of labels is a minor quibble, there are other concerns you need to keep in mind. When you switch between technologies, it's imperative that you switch paper. If you don't, you'll find that mixing technologies produces very faint or nonexistent (but expensive) output. The ColorPoint really needs two paper bins, and the smarts to switch between them depending on the ink rollers installed.

The Benefits The dye-sublimation output from the ColorPoint is impressive—rich and clear. But we were unimpressed with the thermal wax-transfer output—the dot patterns were very defined and they distracted from the overall images. And while the colors between the technologies should match well, we did have slight problems matching up the blues.

Both technologies output our presentation pages at about 3 minutes per page. The high-quality, dye-sublimation printout took a little longer, but not much—about 3 minutes and 15 seconds per page.

This unique color printing solution is expensive, but it will cost you much less than buying two separate printers. If you can keep track of which paper and printer rolls are installed in the ColorPoint, you might just find that Seiko's printer solution reduces the high cost of proofing color pages. KYLA K. CARLSON

One Price, Two Printers: For one price and in one box, you get a high-end dye sublimation and a midrange thermal wax-transfer printer. Use the thermal wax-transfer for your quick proofs, and switch to dye sublimation when you need your output to knock the socks off a client.



Dueling Dyes: Seiko's dye-sublimation output (top) is impressive, but the thermal-wax transfer output (bottom) doesn't keep up—notice the omnipresent rosette patterns. Also, the colors between the two technologies aren't always in sync, especially with the many shades of blue.

USABILITY: *Switching between print methods is tedious.*
PERFORMANCE: *Nearly equal output speeds between technologies.*
TECHNOLOGY: *Seiko breaks new ground with the first high-end dual output printer.*
VERDICT: *Two printers in one box is a great idea, but implementation is lacking.*

FILEBOX

Professional ColorPoint 2 PSF

System Specifications: 16MB of RAM expandable to 124MB, 160MB internal hard drive, 300-dpi resolution in both modes, Adobe PostScript Level 2, Intel 33MHz 80960CA superscaler RISC processor.

Font Support: 104 internal fonts, plus Adobe Type 1 fonts.

Color Matching Support: EFI EfiColor, Apple ColorSync, Agfa FotoTune.

Paper Sizes: A, A Long, A4, A4 Long, A/A4 Super, B, B Long, A3, A3 Long, A3/B Super.

Competition: Fargo offers a dye-sublimation upgrade kit for its low-cost Primera thermal wax-transfer printer, but it's really not in the same league as the ColorPoint.

$16,499
Seiko Instruments USA
(800) 888-0817, (408) 922-5900
Reader Service No. 605

PHOTOGRAPH BY GEOFFREY NELSON

Superior In Every Detail.

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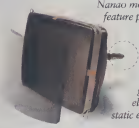

Nanao monitors feature protective coatings and panels that reduce glare and eliminate static electricity.

Nanao was the first monitor company to join in partnership with the EPA Energy Star Program.

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Model	Size	Dot Pitch	Sizes Frequency	Recommended Resolution
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T56b	17"	0.25mm	H 30-65kHz V 55-90Hz	1280x1024
F782b/W	21"	0.26mm	H 31-106kHz V 55-120Hz	1600x1200
F76b/W	21"	0.28mm	H 30-78kHz V 55-90Hz	1280x1024
F56b/W	17"	0.26mm	H 30-65kHz V 55-90Hz	1280x1024
F55b/W	17"	0.28mm	H 30-57kHz V 55-90Hz	1024x768
F54b/W	15"	0.28mm	H 27-61.5kHz V 55-90Hz	1024x768

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Circle 212 on reader service card.

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New! HARDWARE: Cyrix Cx486DRx2 and Cx486SRx2

USABILITY: *Quick and easy CPU upgrade—in most cases.*
PERFORMANCE: *Somewhere between a 386 and a 486.*
TECHNOLOGY: *Small 1K cache, but a smooth upgrade.*
VERDICT: *Cost-effective solution; good performance.*

Light a Fire under Your Old 386

If somebody offered you a $300 plug-and-play way to extend the life of your creaky old 386, you'd say, "Yeah right, and Rush Limbaugh does voluntary campaign work for President Clinton."

We were similarly skeptical about Cyrix's get-fast-quick scheme: a 386-to-486 upgrade chip dubbed the Cx486DRx2. It sounded too good to be true. Pull out your 386DX chip, plug in a new chip, and presto! Your PC's a clock-doubled 486. We know from experience that shortcuts like this usually leave you on a first-name basis with the technical support department. But this one is different.

One Size, Many Styles

Depending on the speed of your original 386 processor, you'll need one of three upgrade versions. Apart from the upgrade chip itself, the package comes with a handy chip-removal tool, a heat sink, caching software that enables the chip's internal 1K cache—based on Cyrix's cache coherency technology—and an I/O booster that's responsible for about one-third of the performance increase.

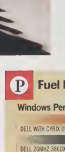
Even with our test systems' numerous drawbacks—including one with a grinding old 25ms hard disk on a four-year-old controller—we saw performance increases of about 44 percent. On a more up-to-date system, performance jumped 50 percent. Neither upgrade put the systems in a league with a real 486, but they did breathe new life into the old machines. More important, they worked the first time and ran all of our compatibility tests perfectly. Our tests included only Windows applications, but Cyrix claims full compatibility with OS/2 as well.

Chips Down: Installing the Cyrix upgrade is painless. The included chip puller evicts the 386 chip easily, and the new 486 clock-doubled Cyrix chip pops in without a hitch. After swapping the chips, install the caching software, and the job's done. And the SX version (shown here) mounts directly on top of your existing SX chip.

The Real Difference: What kind of speed boost can you expect from a chip that snaps on top of a 386? Winbench's measure of graphics and disk performance reveals that it's better than your old 386DX chip, but it's not up to 486 standards. And don't forget the software. Cyrix includes easy-to-install software that enables the chip's caching and is vital to realizing the performance boost.

Fuel Inject Your PC

Windows Performance



NOTE: WINBENCH IS DESIGNED TO MEASURE GRAPHICS AND DISK PERFORMANCE UNDER WINDOWS 3.1

The same can't be said for the competitive and less pricey 486 PowerKit from Buffalo (800) 345-2356, on which we ran the same tests. The bulky unit sits a full half-inch taller than Cyrix's solution and sticks out a half-inch at the side. Furthermore, it didn't install easily, and in one case didn't fit at all. But even the Cyrix chip can be tough to install on some old systems where the processor is hidden under other components.

Look Before You Leap

Most 386 systems are actually powered by the SX version of the chip. But the SX is surface mounted, in all but a few cases, and there's no dime-store tool available to unsolder a chip. Cyrix has turned lemons into lemonade with their solution to this dilemma: The Cx486SRx2, which ingeniously snaps directly on top of your existing CPU and automatically takes over. The SX version, like the DX, is available for three speeds of motherboards (16MHz, 20MHz, and 25MHz). Cyrix even includes a utility called SXTEST that will tell you which upgrade chip is right for your system. Both chips take your existing CPU speed and double it.

The Bottom Line Don't expect a 386 system to give you perfect 486 performance when you install the Cyrix upgrade. But you can count on solid speed increases that make running today's Windows applications on yesterday's machines bearable. And remember: At between $299 and $399, it's a lot cheaper than buying a whole new system. ADAM MEYERSON

FILEBOX

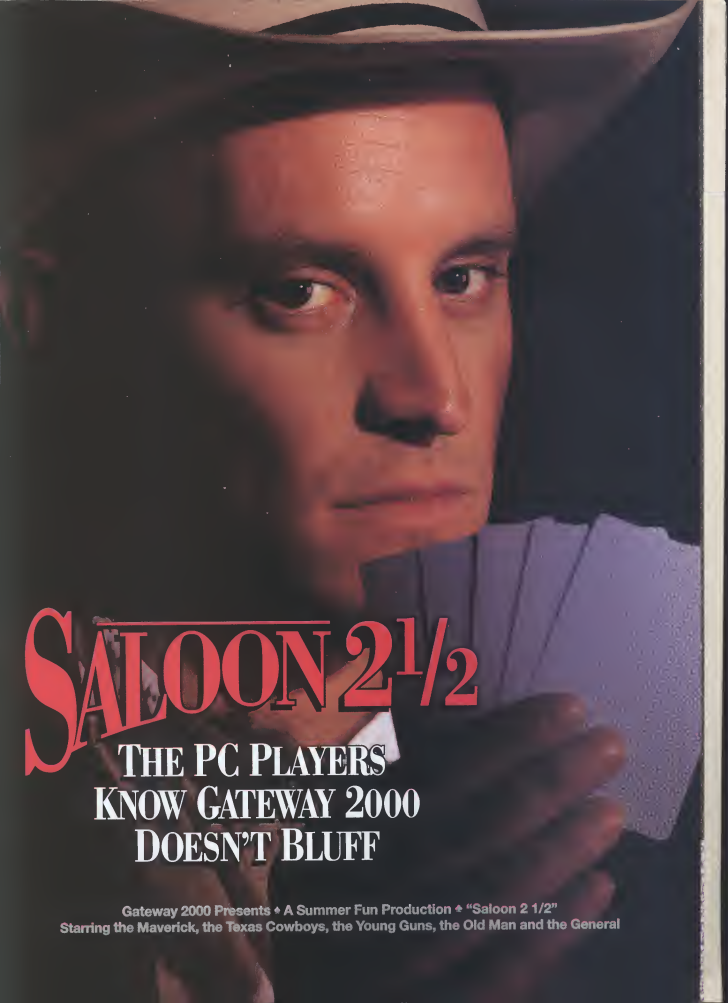
Cx486DRx2 and Cx486SRx2

Hardware included: Cx486DRx2 chip with 1K internal cache, chip-pulling tool, detachable heat sink.

Form Factors: The Cx486-DRx2 is available for 386DX or 386SX systems. The DX fits in the standard socket, while the SX version mounts atop your existing SX CPU.

Cx486DRx2: $299 for the 16MHz to 32MHz 486DX equivalent; $349 for the 20MHz 386 to 40MHz 486; $399 for 25MHz 386 to 50MHz 486
Cx486SRx2: $299 for the 20MHz to 40MHz equivalent; $299 for the 25MHz to 50MHz equivalent
Cyrix Corp.
(800) 462-9749, (214) 994-8387
Reader Service No. 606

PHOTOGRAPH BY ARNOLD PIESILIO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THE STAKES

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Standard

3-Year
Warranty
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Microsoft
Office Pro

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Hold on to your hat, pardner. Gateway 2000® is raisin' the stakes again! Now a double-speed CD-ROM drive is standard on every Gateway desktop PC, *and* every desktop system comes with a three-year limited parts warranty — *including* Gateway monitors! It's one of the strongest warranties in the industry!

On top of that, many Gateway desktops now include Microsoft® Office Pro™ with all of Microsoft's most popular business applications: Word, Excel, PowerPoint,® Access™ and Office Manager. It's powerful software to suit powerful systems. When you bet on Gateway, you're the winner with a hand that is unbeatable in the industry.

Speaking of the PC industry, if you've been hangin' around the PC Saloon for long, you'll recognize that this Gateway ad is a sequel to one that ran way back in the summer of 1990. Taking our cue from Hollywood, we reckoned if "Saloon" was a good ad, we might as well do "Saloon 2 1/2." What was surprising about lookin' back was seeing how many things have stayed the same.

The players around the industry poker table have changed some, but the game hasn't. Gateway's strategy is to deal you a royal flush of value: high-performance, high-quality PCs at the very best prices with old-fashioned, good service. Same as always. And although Gateway has become a Fortune 500 firm, we still think like a small, maverick company from the South Dakota frontier.

Yesirree, when you have a hankerin' for a PC, just holler. We'll give you the best deal in all the land.

intel inside

GATEWAY 2000

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HAS AN UNBEATABLE HAN

WHEN GATEWAY 2000 DEALS,

PENTIUMS™ ARE STRAIGHT ACES

Gateway 2000® Pentium-based systems are the best cards you can hold in terms of price and performance. Starting at only $2,499, they're some of the fastest PCs in the west, hands down. In a price-performance showdown with other CPUs, the 90MHz Pentium outguns them all. You just can't find more horsepower for the money.

Based on the Intel® Pentium processor, all P5 models include a PCI local bus and an enhanced PCI/IDE controller allowing your hard drive to transfer data up to twice as fast as non-enhanced systems.

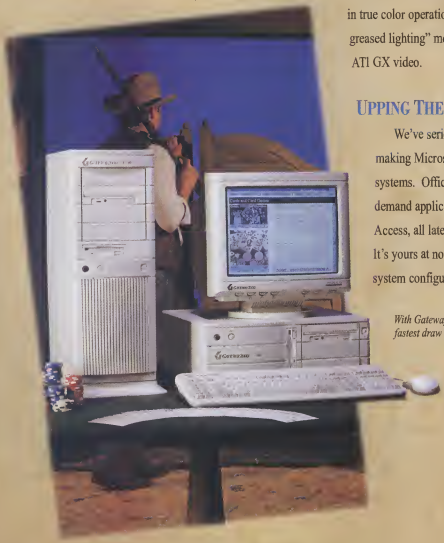
Gateway's ace of spades is the P5-90 Tower model, which includes most everything a PC-poke dreams of, for $3,999. (In the 1990 "Saloon" ad, our most advanced system was a 25MHz 486 with 4MB RAM and a 150MB hard drive for $5,295!)

QUICK DRAW

New this month, the P5-90 Tower has an ATI GX video card for a lightning-fast draw. The ATI GX video card uses the Mach 64 graphics accelerator — one of the first and fastest 64-bit accelerators on the market — and delivers over *100 million Winmarks* of video performance in Winbench 3.11 tests. This graphics accelerator is *twice as fast* as other 64-bit accelerators in true color operation. You'll understand what "faster than greased lighting" means when you try the P5-90 Tower with ATI GX video.

UPPING THE SOFTWARE ANTE

We've seriously upped the ante in the industry by making Microsoft Office Pro standard on most of our systems. Office Pro includes Microsoft's most in-demand applications: Word, Excel, PowerPoint and Access, all latest versions, with a retail value of $899. It's yours at no additional charge when you choose a system configuration with Office Pro standard.



With Gateway 2000's Pentium-based systems, you can be the fastest draw in the West... or anywhere!

intel inside pentium PROCESSOR

YOU DRAW POWER CARDS

A PAIR OF PORTABLES

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COLORBOOK

If you know when to hold 'em, you'll hang onto the ColorBook™ from Gateway 2000. It's a rare card in the portable game that gives you outstanding color and desktop performance at a monochrome portable price.

The ColorBook comes in four 486 models, including the latest 75MHz DX4. Three ColorBook models include a 10.3-inch dual-scan screen, which is the biggest color portable display on the market. You won't find a screen this big, this affordable, anywhere else.

Weighing less than 5.7 pounds, the ColorBook is one of the thinnest color portables around. The ColorBook comes with a powerful Intel SL Enhanced processor — 486SX, DX2 or DX4 — and gives you 256 brilliant colors in VGA mode. These ColorBooks are packed with great features, and you'll love the extras we've added standard to all our models.

GATEWAY2000
HANDBOOK 486

The wild card in our hand is the HandBook® 486. And now Gateway has rustled up the **50MHz DX2** HandBook. Based on Intel's SL Enhanced energy-efficient processor, it's the fastest subnotebook in the West! The 50MHz DX2 is the new trump card in subnotebooks boasting 8MB of RAM, a whopping 250MB hard drive and MS Office Pro. In addition, you'll draw a full hand of features now standard on all HandBook 486 models.

You get an external diskette drive, a PCMCIA fax/modem, two batteries and a dandy leather carrying case — all included. Once you get your hands on a HandBook, you never want to put it down!

The HandBook 486 is the lightest Intel-based 486 portable available today. It weighs less than three pounds and measures roughly 10 x 6 inches. The HandBook's power and portability make it the perfect traveling companion.

It has a bright, backlit VGA screen and a comfortable, touch-type keyboard. You'll also like the HandBook's EZ Point™ integrated pointer, PCMCIA Type II slot, and long-lasting nickel metal hydride battery. You can "hot swap" with the HandBook, too — change batteries or peripherals while the PC is running without rebooting the system or losing any data.

Deal yourself a great hand with the HandBook 486 or the ColorBook from Gateway 2000.

intel inside

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BLAZING FAMILY VALUES

FRONTIER FAMILY PC

With a Gateway 2000® Family PC,™ you and your family can explore the frontier of the wild west, or just about any subject, from the comfort of your home.

The Family PC is a fully equipped multimedia system including a fast CD-ROM drive so you can run the best programs and games with sound, pictures, animation and video. With its high-quality sound card and speakers, the Family PC lets you play music CDs with great stereo sound. The sound card also lets you hear audio clips or record audio.

You get a fax/modem with the Family PC, too, and all the communication software you need to connect with other computer users all over the world. With your modem, you can tie into computer bulletin boards such as CompuServe,® Prodigy,® America Online® and Internet where you'll find forums and information by the gigabyte.

The Family PC also includes great software. You get five outstanding Microsoft titles, plus the Corel Photo CD which is standard on all Gateway desktop systems:

- ♥ Microsoft Works,™ Multimedia Edition — gives you a word processor, spreadsheet, database and much more!
- ♠ Microsoft Encarta 1994 Multimedia Encyclopedia — includes the complete text of the 29-volume Funk & Wagnall's New Encyclopedia, and much, much more!
- ♦ Microsoft Baseball — new this month, Baseball is a sure hit with everyone.
- ♣ Microsoft Money™ — the complete personal financial management package.
- ♥ Microsoft Golf — terrific entertainment for the whole family!
- ♠ Corel Professional Photos CD Sampler — gives you tools to view Photo CD images.

Nobody in the industry deals you a software hand as strong as this one!

Gateway 2000's Family PC includes everything you need for multimedia and communication uses.

GATEWAY 2000 FamilyPC

intel inside

STRONGER PRODUCT SUPPORT

WANTED: 3-YEAR WARRANTY

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Our portables still come with a standard one-year limited warranty on both parts and labor, or you can get our special VIP warranty. The VIP warranty, which gives you a replacement unit within 24 hours, is available only at the time of purchase for an additional $100.

For details on our new warranty and all of our service and support policies, please call or write for a free written copy.

MORE STANDARD SERVICES

As a Gateway customer you also receive a 30-day money-back guarantee and toll-free technical support. Our systems are covered by a one-year limited on-site warranty. On-site service is available in most U.S. locations, and may be provided without charge during the warranty if our technicians determine it is necessary.

A Gateway BBS membership also comes with every system. With the purchase of a modem, you get Triton's CoSession™ Host at no additional charge. This remote diagnostics software enables Gateway technicians to remotely work on your PC, with your permission, over the telephone.

PAYMENT OPTIONS

Gateway accepts most major credit cards and C.O.D. terms, with net 30-day terms and leasing options available to qualified commercial customers. You can also apply for the Gateway 2000 DuoLine™ MasterCard® Card, issued by Dial National Bank, Des Moines, Iowa.

ACROSS THE BORDERS

Gateway 2000 also makes it easy for friends in Canada and Puerto Rico to buy Gateway systems with toll-free telephone service to both countries. See the back pages of this ad for special 800 numbers. Plus, Canadian and Puerto Rican customers get award-winning technical support and CSA approvals. On-site service is available in some Canadian and Puerto Rican locations, and our international shipping rates are among the most competitive in the industry. Give us a call!

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- 101-Key Keyboard & Mouse
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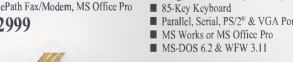

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From waiting.

(Runs some software fast.)

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Second, major software companies are introducing new high-speed versions of their software to take

The PowerPC Microprocessor. *The RISC Chip.*

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To working.

(Runs more software much faster.)

full advantage of the PowerPC microprocessor's higher performance. (Interestingly, many haven't done the same for our competitor's microprocessor.)

One final note on software: PowerPC computers actually run more software than computers based on Pentium microprocessors. With PowerPC computers, you can run Macintosh®, OS/2®, MS-DOS®, Windows®, UNIX® and, soon, Windows NT® software.

To see the PowerPC microprocessor at work, see Apple's new Power Macintosh® at your reseller today. Or for a free copy of our PowerPC Microprocessor Update, call 1-800-845-MOTO (in Europe, call 44 272 447760).

See the difference between waiting and working.

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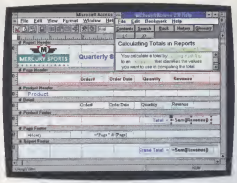
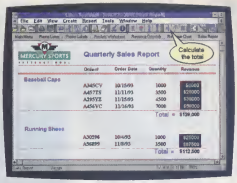
In 1983, Lotus® introduced the world's first approachable spreadsheet. Now we introduce a truly powerful database that's as easy as 1-2-3.

Now you don't have to be a programmer, or even think like one, to build a relational database that brings real efficiency to your work. With the new Approach 3.0, demanding functions like tracking sales, managing projects, taking orders, invoicing, managing contracts and analyzing and reporting data are surprisingly simple.



Constructing a report in Access? "Easy"?



Constructing the same report in Approach. Easy.

Over 200 new usability and power features will take you, yes you, from an overworked skeptic to a productive database-user-for-life in two hours.* Don't doubt it. There's a good reason why Approach is the fastest-growing database in the business.

EASY AS 1-2-3

Lotus Approach is the only database that gives you PowerClick reporting, letting you see and alter your report as you are building it. Just click on the intuitive SmartIcons® to organize and calculate your data. And, the friendly on-line Assistants help you to design your reports, forms, mailings, analyses and more. Compared to Access,® well there's no comparison. As *InfoWorld* recently commented, "Approach (3.0) looks like a better choice than Microsoft Access (2.0): easier to use, yet still fast and powerful."**

In fact, Approach 3.0 extends the power of Lotus 1-2-3® allowing you to create intelligent forms, PowerClick reports, mailing labels, and dynamic crosstabs on your worksheet without ever leaving 1-2-3.

With Approach's X10 query technology, you get blazing speed in organizing, analyzing and manipulating your database. And, Approach gives you the highest performance connectivity to virtually any database, from Paradox® to Access, to Lotus Notes® and more. You also get a powerful new macro capability for sophisticated application development.

And its advanced integration with Lotus Notes, the leading groupware application, makes it the obvious choice for people who work together in groups.

Only Lotus Approach gives you:

PowerClick reporting (for WYSIWYG design)

InfoBox (instant on-screen manipulation)

Smart Assistants (to guide you)

PowerKey technology (for direct access to existing data)

Lotus 1-2-3 Integration (for working with 1-2-3)

Lotus Notes Integration (for reporting on Notes data)

X10 speed architecture (for blazing speed)

Dynamic crosstabs (for drag and drop analysis)

Lotus Approach is one of five Windows™ applications that make up Lotus SmartSuite.® Look into it while a SmartSuite upgrade costs just $299.†

Call 1-800-TRADE-UP, ext. 9894 for more information.

Lotus
Working Together®

Cambridge Parkway, Cambridge, MA 02142. Lotus, Lotus Notes, 1-2-3, Approach, SmartSuite, SmartIcons and Working Together are registered trademarks of Lotus Development Corporation. Microsoft Access is a registered ernational Inc. *MarketProbe International, New York, NY, February, 1993. **InfoWorld, April 4, 1994.

New! HARDWARE: SlimNote 586C

Live Fast, Die Young

USABILITY: *Where's the trackball?*
PERFORMANCE: *Fast, but burns out mighty quick.*
TECHNOLOGY: *Three-stage CPU thermostat controls.*
VERDICT: *Do you have to be the first on your block with a Pentium notebook?*

If James Dean had owned a color notebook, this would have been it. Twinhead is the first company to break the land speed record for color notebooks with its vanguard Pentium machine. But don't call the folks at the *Guinness Book of World Records* just yet—Twinhead had to make sacrifices for speed, and battery life was first on the altar.

While the SlimNote 586C clocked an unbelievable Winstone performance rating, it lasted a mere 35 minutes during our real-world battery test. Twinhead acknowledges that the SlimNote 586C is the kind of machine you'll probably carry from place to place, and plug in at either end—sound advice with battery life like this.

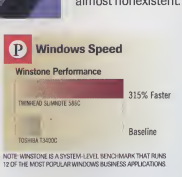
To bring a Pentium notebook to market ahead of everyone else, Twinhead had to settle on a 5-volt design for the SlimNote 586C, which produces more heat and eats more battery power than 3.3-volt systems. To cool down the heat, Twinhead has patented a unique CPU climate-control mechanism.

First, a heat-sensitive fan, which unfortunately takes the place of an onboard trackball, kicks in at 150 degrees Fahrenheit. The CPU also slows down 1MHz at a time until the machine cools off. Second, CPU speed is modulated based on usage: When you stop working, the chip gradually powers down from 60MHz to 8MHz, and when you resume working, it powers back up nearly instantaneously.

The SlimNote 586C packs some high-quality components, including a handsome NEC 9.5-inch color display and a Toshiba 340MB hard drive. If you don't mind working close to a wall socket, the SlimNote 586C is for you. RICHARD SCHWERIN

Life Is Short: The single most important component of Twinhead's SlimNote 586C is its AC adapter. Battery life on this speedster is almost nonexistent.

Speed Trap: Tighten your helmet—this notebook screams! Flat out the fastest color notebook tested to date.



NOTE: WINSTONE IS A SYSTEM-LEVEL BENCHMARK THAT RUNS 12 OF THE MOST POPULAR WINDOWS BUSINESS APPLICATIONS

FILEBOX

SlimNote 586C

CPU: 60MHz Pentium.
Hard Drive: 340MB.
RAM: 8MB to 16MB.
Screen: NEC 9.5-inch.
Expansion: 1 PCMCIA Type II, 1 parallel port, 1 serial port.

$5,495
Twinhead Corp.
(800) 995-8946, (408) 945-0808
Reader Service No. 608

Expert Mouse 4.0 and WinTrac

How to Escape the Mouse Trap

USABILITY: *Smart software makes both more than mice.*
PERFORMANCE: *Tied. Both feature smooth action.*
TECHNOLOGY: *WinTrac's TrackWheel bowls us over.*
VERDICT: *WinTrac by a whisker.*

It takes over your desk, demands that you keep a clean space for it, and then rewards you by knocking over your coffee cup with its tail. A mouse can be so inconsiderate. But it doesn't have to be this way. Enter two new trackballs: Kensington's Expert Mouse 4.0 and MicroSpeed's WinTrac.

Both Expert Mouse and WinTrac are well-designed and comfortable to use, for righties and southpaws alike. Expert Mouse 4.0 looks slicker, but WinTrac has a smoother feel.

Squeak-Off: The WinTrac (top) has better features than the Expert Mouse.

The WinTrac's clean, three-button layout is enhanced by the best feature ever put on a trackball: the TrackWheel, a one-axis roller above the main trackball that lets you page down or cursor down with the slightest gesture. The Expert Mouse's two-button design is adequate, but limited without something like the TrackWheel.

Which one is best for you? Expert Mouse is built better, with superior documentation and cable adapters. But WinTrac, with its clever and incredibly useful TrackWheel, rolls away with our recommendation. JOHN TASCHEK

FILEBOX

Expert Mouse 4.0

$149
Kensington
(800) 535-4242, (415) 572-2700
Reader Service No. 609

WinTrac

$149.95; $179.95 for bus version
MicroSpeed
(800) 438-7733, (510) 490-1665
Reader Service No. 610

TOP: PHOTOGRAPH BY GIAMPIERO BENVENUTI BOTTOM: ARNOLD TIOSE JO

There are many ways to ~~ach~~ address letters.

And to make labkels.

But there's only one smart way to do both.

Pocket your pen. Toss your typewriter. And leave your laser printer alone. Because if you're using any of them to address envelopes or make labels, you're making things hard on yourself. After all, you could be using a Smart Label Printer.

These little machines feature powerful, easy-to-use software. So you can print labels in an instant without exiting an application whether you're working with a Windows,™ DOS or Macintosh® system.

Smart Label software can automatically capture an address or other text and graphics from your computer screen. Print it instantly, or save it to the built-in database. It even lets you personalize labels with graphics, bar codes, digital images, and a selection of over 50 fonts. In short, this unique software makes Smart Label Printers the time-saving, hassle-free, fool-proof solution for labeling everything from envelopes to name tags, file folders to floppy disks.

The Smart Label Printer Pro™ and the Smart Label Printer Plus.® Making labels any other way just wouldn't be smart.

For more information, call 1-800-688-0817.

SII
Seiko Instruments

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Circle 115 on reader service card.

New! HARDWARE: Multigraph 447X

A Trinitron Treat for the Eyes

USABILITY: *Onscreen controls are a big plus.*
PERFORMANCE: *Crystal-clear display, even at high resolutions, is easy on the eyes.*
TECHNOLOGY: *Latest Trinitron tube, Energy Star, and low radiation.*
VERDICT: *A great monitor—not too big, not too expensive.*

Perhaps in the year 2010 we'll all have wall-sized high-resolution monitors with panoramic 3-D views of our applications. In the meantime, we suggest something more down-to-earth: a high-resolution 17-inch display like the $1,250 Multigraph 447X from Nokia Display Products.

The Multigraph 447X showcases the latest monitor technology. Built around Sony's newly redesigned Trinitron tube, the 447X features a tight 0.26mm aperture grill—which means focus is crisp and colors are rich and uniform. The ideal resolution for 17-inch displays is 1,024 by 768, which the Multigraph handles easily at a flicker-free 75Hz refresh rate.

The tube handles 1,280 by 1,024 pixels at 75Hz as well. For real masochists, it will even sync to 1,600 by 1,200, though only at the seizure-inducing 60Hz refresh rate. We don't recommend it.

The Multigraph's onscreen controls are unusually helpful. Instead of the row of cryptic icons and buttons that line the bottom edges of most monitors in this class, Nokia opted to include an onscreen menu of commands. Touch a button on the front of the monitor and you're presented with a list of controls: brightness, contrast, height, and so on.

The Multigraph 447X also supports power management and it connects to both Macs and PCs should it need to do double duty. The only nit we have to pick with the Multigraph is cosmetic: It's plain (which is a nice way to say ugly). The monitor's wide bezel dwarfs the otherwise fine images it displays. NEC Technologies' $1,175 MultiSync 5FGp (see "The Best 200," June, page 188), tops the Multigraph ever-so-slightly in image quality and wears a more handsome design. **WENDY TAYLOR**

Good Picture, Great Price, No Kidding: Seventeen-inch monitors like Nokia's $1,250 Multigraph 447X aren't as dazzling as desk-crushing 21-inch displays—nor will they set you back $2,000.

FILEBOX

Multigraph 447X

Maximum Resolution: 1,600 by 1,200 at 60Hz refresh rate, 1,280 by 1,024 at 75Hz refresh rate.

Aperture Grill: 0.26mm.

Emissions Standards Supported: Swedish MPR II, optional TCO compliance.

$1,250
Nokia Display Products
(800) 296-6542, (415) 331-0322
Reader Service No. 611

CardGrabber Business Card Management System

Scan a Card—Any Card

USABILITY: *Single-purpose product is easy to use.*
PERFORMANCE: *Pretty good OCR.*
TECHNOLOGY: *Clean design.*
VERDICT: *A good solution for business-card overload.*

You collect business cards the way David Letterman collects speeding tickets. And then you lose them. Pacific Crest Technologies has a better way: the CardGrabber Business Card Management System.

The $349 CardGrabber includes a Walkman-sized parallel-port scanner and Windows OCR software. Simply feed a business card into the scanner, approve or edit the OCR result, and in less than 25 seconds CardGrabber files card information into data fields and builds your contact database.

Of our randomly-selected test suite of business cards, CardGrabber recognized more than 30 percent without errors, and another 50 percent needed only minor touch-ups. Twenty percent of the cards were lost causes—mostly the ones with small or artsy type.

Unfortunately, CardGrabber doesn't do batch processing—you must scan, recognize, edit, and save each card before you try another. Nevertheless, scanning cards with it is more efficient than typing or using Rolodexes—and that's the big draw. **RICHARD SCHWERIN**

Card Trick: Make your deck of business cards disappear—but keep the contact names.

FILEBOX

CardGrabber

Hard Disk Space: 5MB.

Minimum RAM: 2MB, 4MB recommended.

$349
Pacific Crest Technologies
(800) 870-3391, (714) 261-6444
Reader Service No. 612

TOP: PHOTOGRAPH BY JIM CARRIER BOTTOM: GEOFFREY NILSON

Awesome monitor. Killer price.

VisionMaster 17" ONLY $799 MSRP

Three "plus" year warranty. 1280 x 1024 at 80 Hz. EnergyStar. Only VisionMaster packs $1,395 worth of performance into a $799 monitor.

This is a monitor to write home about. Every high-performance feature at an unheard of price—backed by the most aggressive warranty in the business. The new VisionMaster 17" FST.

3+ YEAR WARRANTY

It's all here. Precision .26 dot pitch and incredibly fast 80 Hz vertical refresh for crystal clear, flicker-free images. Microprocessor control to eliminate image distortion. An anti-glare coating to relieve eye strain. A base three year warranty that can be extended to five years. MPR II low-radiation certification. And a unique "power-off" energy conservation system that makes any PC that uses it EnergyStar compliant.

Compare these features. Compare our "three plus" warranty. No monitor beats the 17" VisionMaster for value and performance. Call today—they'll be going fast.

For more information or the reseller nearest you, call today at 1-800-394-4335.

VISIONMASTER™

IDEK iiyama

Iiyama North America, Inc.
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Outside the U.S., call 215-957-6543
Fax: 215-957-6551

* Three year warranty on parts and labor when purchased through an authorized reseller
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VisionMaster is a trademark and product of Iiyama North America.
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Circle 179 on reader service card.

No monitor beats the 17" VisionMaster

	VISIONMASTER MF-8617	VIEWSONIC 17	VIEWSONIC 17G	NEC 5FGE	NEC 5FGP
SCREEN SIZE	17"FST	17"FST	17"FST	17"FST	17"FST
DOT PITCH	.26mm	.28mm	.28mm	.28mm	.28mm
MAX RESOLUTION	1280 x 1024	1280 x 1024	1280 x 1024	1024x 768	1280 x 1024
MAX. REFRESH @ 1280 x 1024	80Hz	76Hz	60Hz	N/A	76Hz
COLOR MATCHING	YES	YES	YES	NO	YES
POWER SAVING	YES	NO	YES	NO	YES
WARRANTY PARTS/LABOR	3YRS/3YRS	3YRS/1YR	3YRS/1YR	3YRS/3YRS	3YRS/3YRS
EXTENDED WARRANTY	YES 2 YEARS	NO	NO	NO	NO
PRICE	$799	$1199	$999	$1155	$1455

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Save At Any Speed.

Think of it as an airbag for your computer.

Data is your computer's most important passenger.

Think of all the time and money you have invested in creating and storing the information on your computer. Now think of what would happen if one day it all was lost. Let's face it. It's an imperfect world and accidents happen. Fires, floods, earthquakes, theft, power failure, hard disk crashes and just plain human errors can cause your valuable data to somehow disappear. Protect your investment by backing up your data regularly. with Colorado Tape Backup Solutions.

CAUTION! DATA ONBOARD

With capacities from 120 MB up to 4 GB, there's a solution that's right for you. Colorado Tape Backup is easy, fast, reliable and costs less than a comparable stack of floppy disks. And Colorado is recommended more than all other backup systems combined, earning dozens of industry awards. Save time. Save money. Save your computer's most important passenger: your data. Explore Colorado Tape Backup Solutions today.

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Extension 730

PC Computing BEST 200 June 1994

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Circle 184 on reader service card.

Lotus 1-2-3 Release 5 for Windows

Today Spreadsheets, Tomorrow the World

USABILITY: *Intuitive interface.*
PERFORMANCE: *Release 5 is fast and responsive.*
TECHNOLOGY: *The only spreadsheet to include a mapping feature.*
VERDICT: *For geographical data, this is a must-have.*

If you thought that the current spreadsheets had every feature under the sun, think again. Lotus 1-2-3 Release 5 for Windows adds something you won't find in any other spreadsheet: integrated mapping. Best of all, there are more reasons to upgrade: Lotus has finally put Release 5 on speaking terms with Lotus Approach (see "A Fresh Approach to Databases" New! July, page 75), improved its workgroup features, and included a new way to keep your documents looking their best.

City Mouse If you need to view your data geographically—by state, region, or country, for example—you can do it within the comfort of 1-2-3. A few mouse clicks is all it takes to display your company's sales on a color-coded map. You'll find maps of the United States, Canada, Mexico, Japan, and Europe, as well as 1,500 cities worldwide. This is an excellent feature, with a wealth of potential productive business uses.

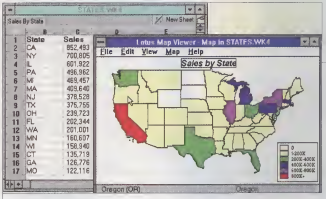
In the past, 1-2-3 and Approach didn't work very well together. This upgrade has several new features that make Approach 3.0 seem like it's part of the spreadsheet. New 1-2-3 menu options let you create Approach forms, reports, and mailing labels. You can also generate dynamic crosstab tables, similar to Excel's pivot tables or Quattro Pro's Data Modeling Desktop.

Release 5 gives Excel and Quattro Pro for Windows a run for the money when it comes to workgroup features. The new Range Routing lets you delegate or distribute a spreadsheet model—or better, part of a model—to other users by way of Lotus Notes or any VIM/MAPI mail system. You can merge the routed ranges back to the source file and manipulate them using 1-2-3's Version Manager.

Looking Good Another new feature, SmartMasters, simply makes you look good. SmartMasters is a collection of ready-made macro-driven templates for common spreadsheet tasks such as budgeting, expense tracking, and invoicing. There's even a shell that simplifies the process of creating your own templates. But even with all these new enhancements, Excel and Quattro Pro still have more powerful macro capabilities.

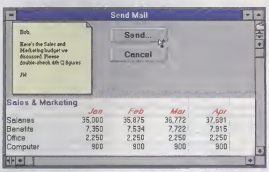
This upgrade supports OLE 2.0 drag and drop between spreadsheets or applications. You can copy a range from one worksheet to another simply by dragging it. And if your word processor complies with OLE 2.0, you can select a range or chart from 1-2-3 and drag it into your text. However, limited viewing options are still a problem—1-2-3 doesn't allow you to open multiple windows into one file.

Lotus 1-2-3 for Windows is an excellent choice for both novices and advanced users. Its Version Manager is unmatched, and working with external databases has never been easier. But if your primary concern is developing macro-driven spreadsheet applications, Excel and Quattro Pro still have the edge. ROBIN J. WALDEN



	State	Sales
1		
2	CA	852,493
3	NY	700,605
4	IL	601,822
5	PA	498,982
6	MI	483,457
7	MA	465,640
8	NJ	378,528
9	TX	375,758
10	OH	238,723
11	FL	202,344
12	WA	201,001
13	MN	180,637
14	WI	158,940
15	CT	136,718
16	GA	126,776
17	MO	122,118

Make Me a Map: When standard charts don't cut it, the new mapping in 1-2-3 is what you need. Enter state or country codes, select Map from the Tools menu, and Lotus does the rest.



	Jan	Feb	Mar	Apr
Salaries	35,000	35,675	36,772	37,691
Benefits	7,350	7,534	7,722	7,915
Office	2,250	2,250	2,250	2,250
Computer	$00	$00	$00	$00

In the Mail: It's now easier than ever to share data electronically. New workgroup features in Lotus 1-2-3 Release 5 for Windows include easy-to-use routing capabilities. In a snap, you can route an entire file or just a selected range using Lotus Notes or another e-mail program. You can even attach messages to your data.

FILEBOX

Lotus 1-2-3 Release 5 for Windows

Requirements: Windows 3.1 or later; 10MB of hard disk space; 4MB of RAM, 6MB for Approach or mapping.

Competition: Microsoft's Excel 5.0 for Windows, Borland International's Quattro Pro 5.0 for Windows, but they don't have maps.

$495 ($395 for network-license pack); $129 for competitive upgrade
Lotus Development Corp.
(800) 343-5414
(617) 577-8500
Reader Service No. 620

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• 486DX/33MHz[2]	• i486™DX4/100MHz
• Pentium chip upgradable[2]	• Pentium chip upgradable
• 270MB[3] HD, 4MB RAM	• 728MB[3] HD, 8MB RAM
• SpaceSaver with 3 slots, 3 bays	• Desktop with 5 slots, 5 bays
• VESA local bus	• VESA local bus
	• 256K L2 cache

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$1989	**$2985**
IBM Credit Lease $73/month[1]	IBM Credit Lease $110/month[1]
• i486SX/33MHz	• i486DX2/66MHz
• Pentium chip upgradable	• Pentium chip upgradable
• 270MB[2] HD 4MB RAM	• 364MB[2] HD, 8MB RAM
• SpaceSaver with 3 slots, 3 bays	• Mini-Tower with 8 slots, 6 bays
• VESA local bus	• VESA local bus
	• 128K L2 cache

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IBM

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ValuePoint 433SX/Dp	ValuePoint 466DX2/Dp
$2049	**$2629**
IBM Credit Lease $76/month[1]	IBM Credit Lease $97/month[1]
• i486SX/33MHz	• i486DX2/66MHz
• Pentium chip upgradable	• Pentium chip upgradable
• 270MB[2] HD, 4MB RAM	• 270MB[2] HD, 4MB RAM
• Desktop with 5 slots, 5 bays	• Desktop with 5 slots, 5 bays
• VESA local bus	• VESA local bus
	• 128K L2 cache

The ValuePoint configurations listed above include an IBM Enhanced 101-Key Keyboard & Mouse. 1MB Video Memory (upgradable to 2MB). DOS & Windows preloaded and a 14V monitor.

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To order call today!

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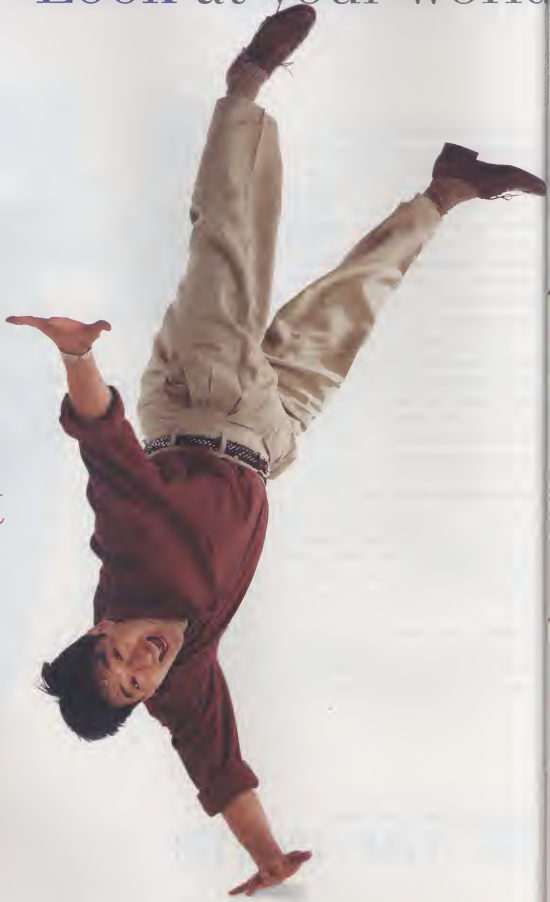
Look at your world



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The new ThinkPad® 755Cs. It may very well be the most powerful sales tool ever created. With one of the fastest notebook processors around. Spacious, removable hard drives available up to 540MB. Local bus video, a built-in microphone and CD-quality audio chip. Plus an arsenal of cutting-edge options.

ThinkPad 360Cs	ThinkPad 755Cs
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• One Type III or two Type II PCMCIA slots	• One Type III or two Type II PCMCIA slots
• Over $800 worth of preloaded business software	• Over $800 worth of preloaded business software
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The ThinkPad configurations listed above include a 3.5" 1.44MB diskette drive, 85-Key Keyboard with integrated TrackPoint II™, NiMH battery and AC adapter, and a 9.5" VGA color display monitor.

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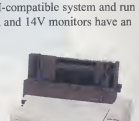
17V.....$999 **15V.....$579** **14V.....$429**



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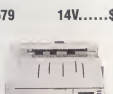

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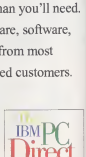

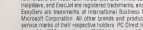

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New! SOFTWARE: Sidekick for Windows

Sidekick Sidesteps Other PIMs

USABILITY: *So intuitive, you'll never need a manual.*
PERFORMANCE: *The program never kept us waiting.*
TECHNOLOGY: *More powerful than low-end PIMs, but just as simple.*
VERDICT: *Sets the ease-of-use standard for PIMs.*

Back when I was a lad, a personal information manager (PIM) fit into 48K of low RAM. We used WordStar commands. We had ASCII conversion tables. Sidekick was our PIM, and we were lucky, I tell you.

But then Windows came along and everything changed. And Sidekick faded from memory. Until now.

Ten years after Sidekick hit it big, Borland is releasing the Windows version of this old standby. It's been worth the wait. Full of features and easy to use, Sidekick for Windows is as attractive and friendly as entry-level PIMs like Lotus Organizer. In fact, it looks a bit like Organizer, right down to the wastebasket.

In Sidekick for Windows, you'll find a host of views for the appointment calendar, a card file for contact names and addresses, a to-do list, and a list of your calls to return. Sidekick also has a view for free-form text notes, such as notes of telephone conversations—a feature too often neglected in most modern PIMs.

Flexible Power Scratch beneath the surface of Sidekick and you'll find surprising flexibility. The card-file view has dialog boxes that make it child's play to create and modify your own databases so that you can track items in addition to names and addresses. Sidekick also has powerful yet simple querying capabilities—it can walk you through the process of creating complex Boolean searches of the database or let you search through free-form text.

You can easily drag items from contact cards to the to-do list, phone list, or calendar. You can also create a view within a view (similar to the picture within a picture you've seen on high-tech TVs) to drag information between two Sidekick modules. For example, if you're viewing the calendar, you can see contact cards by selecting that view from the drop-down list. Then simply drag a name from a contact card to your calendar to schedule an appointment, pronto.

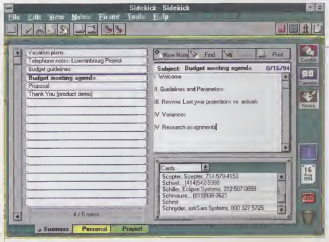
Another great feature is the Quick Menu, located in the upper left corner of your application. From any Windows application, it takes you to a specific view within Sidekick, such as a weekly calendar.

Speaking of calendars, Sidekick has extensive printing and reporting capabilities. You can print in the formats of most popular hard-copy day planners and Avery labels.

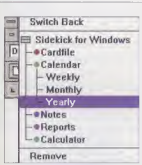
Sidekick could improve its linking of information. You can't, for example, link a contact card to free-form notes about that contact without going through the clipboard.

Selfish Data Sidekick won't win awards for its workgroup capabilities; it's standalone only. If you need to share data or schedules, we recommend Ecco Simplicity 2.0.

Sidekick is more than just a blast from the past. It's an up-to-date product for those who need power without the complexity of the more advanced PIMs. The only thing about Sidekick that's mired in the past is its low $29.95 price—and we wouldn't want it any other way. DAVID HASKIN

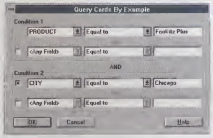


Numerous Notes: Sidekick for Windows makes it easy to take free-form notes. You highlight the notes you want in the list on the left side and view or edit them in the window in the upper right. You also can create folders to store notes and search their contents.



Quick Switches: Sidekick's views are just a mouse click away with the Quick Menu. This drop-down menu sits in the top left corner of all Windows applications.

Simple Searches: Not surprisingly from the company that gives us dBASE and Paradox, Sidekick's database capabilities are robust for a PIM. Even better, they're a snap to use. This dialog box is where you define Boolean searches for information in your database. You can also create your own database for tracking other relevant items.



FILEBOX

Sidekick for Windows

System Requirements: Windows 3.1, 4MB of RAM, 3.1MB of free disk space.

Competition: Ecco Simplicity, Lotus Organizer, Polaris Advantage.

Bonus: 10,000 free copies available for downloading on PC/Contact through July 31.

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New! SOFTWARE: Windows on WallStreet Pro

Master of the Financial Universe

USABILITY: *Push-button charts couldn't be easier.*
PERFORMANCE: *Quick redraws with 8MB of RAM.*
TECHNOLOGY: *Excellent system back-testing.*
VERDICT: *Brings great analysis tools to the desktop.*

What sends a stock through the roof—fundamentals or fever? If you could get a PC to give you the answer, you could out-trade Warren Buffett. But while Buffett would be the first to tell you that fundamentals—such as earnings, assets, and revenues—are the best indicators of a stock's worth, consider Buffett's famous jab at stockbrokers: A guy walks into a fly-fishing store and grabs a hairy handful of flies. "Fish actually like these?" he says. The storekeeper's reply: "I don't sell to fish."

Fundamentals may be the long-term determinants of fair value, but a herd of crazed buyers can still shoot a stock price up faster than Michael Milken's courtroom blood pressure. Nonetheless, technical analysts ski up and down securities charts, slaloming around indicators like Chaikin Oscillators in their quest to predict stock performance. The new Windows on WallStreet Pro software brings their brand of analysis to your desktop.

Base Breakout! Like its close competitor MetaStock, Windows on WallStreet Pro is an armchair technical-analyst's jewel. We found the program's price rate-of-change indicator particularly useful. This indicator points to securities that are overbought or oversold. We tested the indicator against the charts of a few hate stocks of the last few years. For example, had you invested $10,000 in Citicorp in 1991—when Windows on WallStreet Pro's indicators called it out as extremely oversold—you'd have made nearly $30,000 by now. Not bad.

There are countless other indicators in Windows on WallStreet Pro, most of which are designed to point to extreme swings in price and volume. One of the more fascinating charts, Cycle Lines, includes the charted price of a security over time segmented by evenly spaced vertical lines. This view is useful when charting the performance of cyclical stocks. Chrysler has seen its stock price plummet by more than 25 percent since the beginning of the year, despite record earnings. Why? Chrysler is a classic cyclical stock. Using Cycle Lines, we found it easy to spot the fact that Chrysler's uptrend had already become long in the tooth by January.

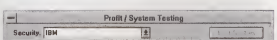
Buy or Sell? Compared to the charting capabilities of other mainstream investment products, such as Reality Technologies' Reuters Money Network, Windows on WallStreet Pro's charts are a graphical tour de force. Aside from all the indicators it plots, it puts an unlimited number of securities in one chart.

Reuters Money Network, on the other hand, can plot only four securities concurrently. If you're a comparison shopper, that difference is important.

We found Windows on WallStreet Pro's charts addictive, but we also think investors should offset its graphical approach with a product that lets you get at financial fundamentals such as price/earning ratios and dividend yields. For that data, Reuter's Money Network (215-277-7600) is the best bargain, and Value Line Publishing's Value Screen III (800-284-7607) has detailed company data. Remember: The well-prepared stock picker has done the reading, not just looked at the pictures. SEBASTIAN RUPLEY

Leave Home without It? Look at the far right of this 1993 chart of American Express's stock. Notice the red high-trading–volume indicators at the bottom of the screen tracking a huge plummet in price. Had you spotted overreaction and bought the stock at $23, you'd have made 30 percent in less than a year.

Invest in Your Past: Wouldn't it be great to have decades of investment experience behind you? MarketArts' Windows on WallStreet Pro will back-test trading strategies. You can use existing celebrity systems such as Bollinger's Band or Barnes' Moving Average, or you can build your own strategies.



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Windows on WallStreet Pro

System Requirements: 386 and 4MB of RAM; 486 and 8MB of RAM recommended.

Hard Disk Space Required: 8MB minimum, more for historical data.

Competition: MetaStock has more features but it's more expensive and harder to use.

$295; $89.95 for Investor's Power Pack including data on 200 top stocks (prices for database updates and historical data vary) MarketArts (800) 998-8438, (214) 235-9594 *Reader Service No. 622*

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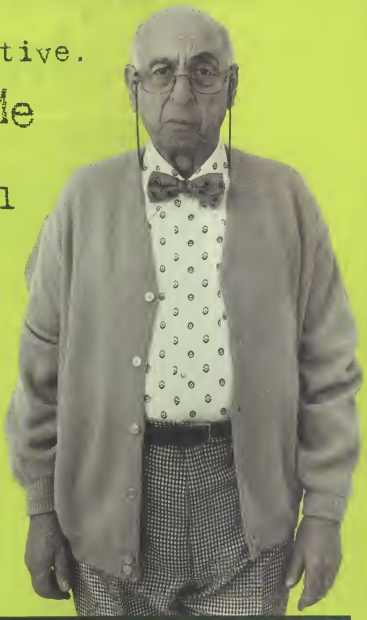

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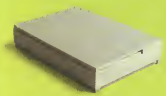

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New! SOFTWARE: CA-SuperProject 3.0c, Project 4.0, Time Line 6.0

Power through Your Projects

USABILITY: *Microsoft Project has the best online helpers.*
PERFORMANCE: *CA-SuperProject excels at resource crunching.*
TECHNOLOGY: *Time Line and Project both have DDE and OLE support.*
VERDICT: *Unless you're a pro, go for Project.*

Maybe—if you've been working for the Navy for the last 50 years—you understand the intricacies of resource leveling, deviation factors, and start-to-finish dependencies. But for the rest of us, tackling project-management software is like trying to unravel the Gordian knot. Lucky for you, Computer Associates' CA-SuperProject 3.0c, Microsoft's Project 4.0, and Symantec's Time Line 6.0 for Windows are all first-class project managers designed to slice through the tangle of tasks, due dates, budgets, and reports with intuitive interfaces, short learning curves, and comprehensive online help.

Cross-Platform One a black sheep that looked more like its DOS predecessor than a Windows program, CA-SuperProject now sports an improved interface and support for DDE both as a client and a server. And it leaves the other programs behind in the interoperability arena: It runs on several platforms, including OS/2, DOS, and VAX/VMS, and will soon be released for Unix and Windows/NT. Projects can be transported from one system to another without data translation.

CA-SuperProject also has top-notch context-sensitive help, Wysiwyg reporting, resource management, and multiple-project management. It's not as easy to use as are the other packages reviewed here, but it does include an interactive Project Management Assistant similar to Microsoft Project's Wizards.

Easy to Learn The revamped Microsoft Project 4.0 is much more powerful than the previous version. It's a real powerhouse project manager, yet it's the easiest of the bunch to learn. In addition to Project's Cue Card help system that tells you what you need to know when you need to know it, Microsoft's IntelliSense Planning Wizards are always popping up with useful suggestions.

The new version includes excellent drag-and-drop capabilities that let you change task durations and link tasks with the click of a button. And in addition to supporting DDE and OLE 2.0, Project also fits Microsoft Mail and Schedule+ like a glove, allowing managers to work together on master schedules. If you're already a Mail and Schedule+ user, the Project integration makes for a powerful groupware suite.

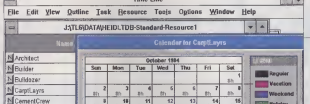
Two Views The interface of Symantec's Time Line has two windows: a spreadsheet view and a Gantt chart (you can enter data in either view). From this interface, you can deploy almost all of Time Line's tools to create your various projects.

While the learning curve is longer than Microsoft Project's, well-versed spreadsheet users will find Time Line simple to master.

Time Line's excellent online help includes a tutorial for neophyte project managers, an option that explains your mistakes, and a Co-Pilot feature that even warns you before you make one. And like Microsoft Project, Time Line includes DDE and OLE support.

We liked each of these programs—which one is right for you really depends on your style. If you work at a die-hard Microsoft shop, then Project will tie in nicely with your existing applications. For spreadsheet fiends, Time Line offers the most familiar interface. And if it's interoperability you're after, go for CA-SuperProject.

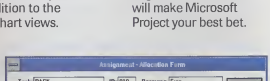
STEVEN J. VAUGHAN-NICHOLS



Different Views: Time Line gives you multiple views of your project's data, in addition to the standard spreadsheet and Gantt chart views.

Hand Holder: If you're a project-management beginner, Cue Cards will make Microsoft Project your best bet.

Making Time: SuperProject lets you factor a degree of uncertainty into task durations. The program can then calculate the optimistic, pessimistic, and most likely time estimation for every project you undertake.



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CA-SuperProject 3.0c

Hard Disk Footprint: 3MB.

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Project 4.0

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When we introduced the Compaq ProLinea, it was more than just a new computer. It was a whole new idea. The first computer to deliver the right features and high quality at a price that was affordable for everyone.

And now we'd like to build on that idea. Introducing our newest ProLinea: A computer that's been designed to make your money go further still.

To begin with, it's fast. Our new ProLinea offers a choice of Intel processors, right up to the IntelDX4. Video is up to 27% faster. With support for a 128K memory cache, you can boost speed another 35%. And, should you ever thirst for greater speed, you can easily upgrade to a Pentium OverDrive.

But going faster is only part of our story. True to the Compaq spirit, we made ProLinea even easier to use. It comes pre-loaded with the latest version of Microsoft Windows, along with TabWorks,™ which graphically simplifies the way you view and organize all of your work.

It also comes with built-in Plug and Play capabilities, bringing new ease to the process of adding add-on devices and expansion cards.

And while we made the ProLinea easier to work with, we also made it easier to own. It meets Energy Star standards, to save money in the long run. Better still, it's priced to keep your costs down today—starting at only $950.* That, of course, includes all the benefits of owning a Compaq, from our free three-year warranty** to our free 24-hour helpline.

If you'd like a demonstration of affordable, easy-to-use power, go try a ProLinea at your nearest authorized Compaq reseller. If, on the other hand, you'd like to receive specifications via fax, just call 1-800-345-1518, choose the PaqFax option and request document #4032.

It's a moment in computer history everyone can savor — as Compaq raises the value of a dollar once again.

COMPAQ

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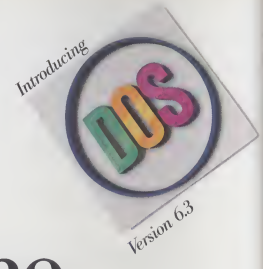

High octane

Want to pump up the performance of your PC? Fill 'er up with PC DOS 6.3. IBM's award-winning PC DOS is compatible with previous DOS versions, including MS-DOS.® But PC DOS 6.3 delivers more function, with an unmatched range of built-in utilities: IBM AntiVirus; integrated compression technology that's safe, fast and DoubleSpace® compatible; Central Point®'s full-screen backup including tape support; memory optimizer; full screen editor; CD-ROM support and more. And to top it all off, PC DOS will really get your Windows™ whirring.

for your

Includes: disk compression, IBM anti-virus, PCMCIA, memory optimizer and more.

IBM

PC DOS 6.3

Version 6.3 3.5" Disks Upgrade Edition

WHAT'S UNDER THE HOOD?	PC DOS 6.3	MS-DOS 6.21
Integrated compression.	YES	NO
Dynamic memory optimizer.	YES	NO
Number of viruses that can be detected.	2000	800
Full-featured backup support.	YES	NO
Program scheduler.	YES	NO
PCMCIA and Pen support features for mobile users.	YES	NO

With PC DOS 6.3 under the hood, you can shift your hardware *and* software into high gear. **To order or to find out more, call 1 800 342-6672.** In Canada, call 1 800 465-7999. PC DOS 6.3 is also available at local software dealers.

PC.

IBM®

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Netwave AccessPoint and CreditCard Netwave Adapter

Hang Ten on the Netwave

Sure, you need to connect your notebook to a network periodically, but why shackle your freewheeling portable with the ball and chain of a LAN adapter and cable? Instead, try unleashing your notebook with Xircom's Netwave AccessPoint, a sleek and powerful approach to wireless networking.

Air Way Xircom's Netwave AccessPoint (which you plug into the LAN) and CreditCard Netwave Adapter work in tandem to turn your notebook into a nomadic network node. The only cable involved—either 10BaseT or 10Base2—is the one that you use to connect the Netwave AccessPoint base station to your existing NetWare or other network.

Once the AccessPoint is connected, simply slide the PCMCIA card into your notebook's Type 2 slot, load the drivers, and voilà, you're wired. We had no problems installing the CreditCard and making a connection on our Gateway 2000 HandBook.

If your notebook uses PCMCIA Card and Socket Services 2.01 or 2.1, CreditCard will take advantage of them. If not, Xircom ships with device drivers, known as *enablers,* that bypass the PCMCIA Card and Socket Services. Under most circumstances, it's best to use the Card and Socket Services, since they offer the advantages of hot swapping and a common foundation for any other PCMCIA cards you may have.

Roam Free You can roam within a radius of 90 feet of Netwave AccessPoint, and even further if no walls come between you and the base station. We found we could wander anywhere within 90 feet on the same floor, but we lost our connection when traveling between floors, even though the distance was less than 90 feet. If you roam out of range for a few seconds, the Netwave tries its best to reestablish a connection once you wander back in.

Consider using multiple AccessPoints: Since each base station supports ten users, you will not only be able to network your entire department, but you'll also increase your mobility. Netwave always searches for the strongest AccessPoint signal and transfers you among different base stations transparently.

You won't be sacrificing speed for all this convenience, either. Our tests reveal that Netwave outguns Xircom's parallel-port adapter by more than 50 percent. Performance may be slower than with traditional internal network cards, especially if you're loading large files across the network. But you won't notice any performance degradation on simple operations like e-mail and copying small files.

The steep price of Xircom's Netwave—$1,499 for AccessPoint and $599 for CreditCard Adapter—makes NetWave an impractical solution for a single user. But if you want your department connected without being tied down, Netwave's the only wave to catch. JOHN TASCHEK

Airborne: Xircom's two-piece wireless networking solution uses 2.4GHz spread-spectrum technology for office networking. The hard-wired AccessPoint base station includes a Type 2 PCMCIA slot for one CreditCard Adapter (the other goes in your notebook), as well as LEDs that monitor the status of the network cable connection. The CreditCard Adapters include LEDs that let you know the status of the wireless link and indicate network activity.

Clearer Path: Netwave blew past Xircom's Pocket Ethernet adapter in our network tests, partly because it's not hamstrung by limited parallel port throughput.

USABILITY: *No-brainer installation.*
PERFORMANCE: *Outperforms hard-wired parallel port adapter.*
TECHNOLOGY: *Spread spectrum-based for reliable, unlicensed connections.*
VERDICT: *Expensive, but that's the price of network freedom.*

FILEBOX

Netwave AccessPoint and CreditCard Netwave Adapter

CreditCard Size: 4 inches by 2.13 inches by 0.20 inches.

CreditCard Weight: 0.85 oz.

Topologies Supported: 10BaseT or 10Base2, Ethernet only.

Network Operating Systems Supported: Windows for Workgroups, Microsoft LAN Manager, Novell NetWare, Novell NetWare Lite, Banyan Vines, DEC Pathworks, and FTP Software LANWatch.

$1,499 for Netwave AccessPoint; $599 for CreditCard Netwave Adapter
Xircom
(800) 874-7875, (818) 878-7600
Reader Service No. 640

PHOTOGRAPH BY ARNOLD TIOSELIO

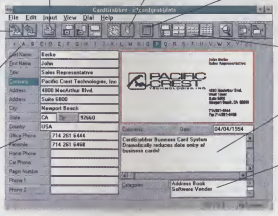
DON'T PILE, FILE!

Use multiple print formats (mailing labels, etc.), plus build your own

Set-up special filters to sort your database

Quickly search for entries by name or company

Works with virtually all databases, PIMs and contact management systems



Works with virtually all databases, PIMs and contact management systems

View multiple cards for quick reference

Entries automatically alphabetized

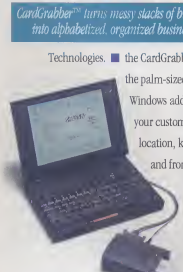
Save comments, dates, notes

Click here to dial out with your modem

Create and assign categories

CardGrabber™ turns messy stacks of business cards into alphabetized, organized business assets!

Finally, there's a solution for managing important business card information that makes sense for today's business—the award-winning CardGrabber system from Pacific Crest Technologies. ■ the CardGrabber system dramatically cuts typing—eliminates piling and shuffling. Users simply slide a business card into the palm-sized scanner and in seconds the software reads the data and places it into the full-featured Windows address book. The scanner plugs into the parallel port for easy installation and portability for your customer and fewer returns than adapter-card systems for you. Cards can be recalled by name, location, key words or any number of other ways. ■ The CardGrabber system even transfers data to and from programs like ACT!, Polaris Pack Rat, Lotus Organizer, ECCO or Franklin Ascend, which translates to add-on and follow-up sales. And it prints labels, directories, or offers customizing for DayTimer, Rolodex or any organizer. ■ No wonder it's the leading business card management system. What's more, we stand behind the product with a 60-day money-back guarantee and free technical support. ■ Get behind a winner. Get healthy profit margins. Get the CardGrabber system! Call **1-800-870-3391** now.



1994 WIN WIN-UP 100 WINNERS & WHAT'S HOT

IMAGING MAGAZINE EDITOR'S CHOICE

CardGrabber™

COMPUSA. THE COMPUTER SUPERSTORE.

EGGHEAD SOFTWARE North America's Software Resource.

Pacific Crest Technologies, Inc 4000 Macarthur Blvd. West Tower, Suite 6800, Newport Beach, CA 92660 (714) 261-6444, Fax: (714) 261-6468

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Circle 266 on reader service card.

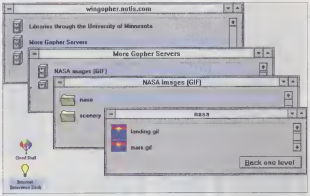
Burrow Your Way through the Net

Imagine you've found the perfect car with all the features you want—AC, sunroof, a killer stereo system—but it's designed solely for paved roads, leaving off-road treks off-limits. That's what it's like to use Notis Systems' WinGopher Complete. It's the perfect Internet search GUI with all the features you want—a TCP/IP stack, Telnet, FTP, Veronica, Archie, and Wide Area Information Server (WAIS) capabilities—but it's designed solely for Gopher servers, leaving e-mail and World Wide Web (WWW) sites off-limits.

Sit Back, Relax If you're comfortable with Windows, you'll be at ease with WinGopher Complete, which presents documents and other Gopher server files in directory and folder hierarchies. (Gopher is a program that runs on thousands of Internet-connected computers; it's one way an organization can make information available to the rest of the world.) Searching with WinGopher is simple: Launch the application, examine the files and directories available, and double-click to view the information. Well-designed search dialog boxes help you locate specific information from any Gopher server, and clever animation and sound options can be associated with events such as start-up and shut-down.

If you already know the Internet address of a Gopher server, collection item boxes can save you time by bypassing numerous Gopher menus and connecting you directly. You can also save these collections, which makes for a handy hot list of your frequently visited Gopher sites.

Net Burrowing Gopher servers, like much of the Internet, offer just about anything. You can peruse a library of wiretap spy information (wiretap.spies.com) and download an article on ceramics glaze (nceca.sdsu.edu). To view TIFFs and other graphic files, WinGopher Complete includes WinGIF, a shareware viewer that displays GIF, JPEG, and Encapsulated PostScript files.



Cascading Windows: WinGopher Complete splays out your Gopher trek in an easy-to-follow Windows-like hierarchy. But unlike a trail of breadcrumbs in the forest, your last step is always a button away. In this example, we're perusing a list of NASA GIF images.

Take a Collection: Avoid hassle by saving often-visited Gopher sites using Collection Manager. Customize search sessions by placing collections in the startup folder.

One of the more useful Gopher servers is run by the National Science Foundation (gopher.nsf.gov). This central clearinghouse for scientific reports and documents provides pointers to other government Gopher servers such as the GPO (gopher.sura.net).

InterNIC, the central Network Information Center for the entire Internet, is also housed on a Gopher server (gopher.internic.net). Organizing a search party? Start with a subject-oriented directory for all Gopher servers included in WinGopher Complete's Good Stuff directory and a canonical list (gopher.tc.umn.edu).

Gimme the Works The $129 WinGopher Complete is aptly named, since it ships with Distinct's TCP/IP network drivers. But you're not forced to use Distinct's stack. We used Wollongong's PathWay Access. Others will work just as well, including Frontier Technology's SuperTCP, NetManage's Chameleon, and Novell's LAN Workplace. If you're already TCP/IP-enabled, Notis offers regular WinGopher for $69, and it will easily use your existing stack without requiring any nasty manual reconfiguration.

While Gopher servers are plentiful and offer a wide variety of information, there are a multitude of other cyber-gems on the Net that WinGopher simply can't access, including WWW sites that you access through a program like Mosaic (see "Untangling the World Wide Web," New! July, page 113) and e-mail. Usenet news groups are available as read-only files (rs6000.adm.fau.edu). While this is fine for digital lurkers, not all groups make their way onto Gopher servers. But if you want a great way to tap the vast array of Gopher servers worldwide and you don't want to go off-road, WinGopher Complete is your best bet. RICHARD SCHWERIN

USABILITY: *A very simple interface to a complex net of information.*
PERFORMANCE: *It'll fly as fast as your modem lets it.*
TECHNOLOGY: *Built-in, automatically configured TCP/IP is a major bonus.*
VERDICT: *Great way to search and scan the Gopher universe.*

FILEBOX

WinGopher Complete

System Requirements: 386 or better, Windows 3.1 or later, MS-DOS 5.0 or later, 4MB of RAM, 3.5MB of hard-disk space, 9600 baud or faster modem.

Estimated Number of Registered Gopher Servers Worldwide: More than 10,000.

Estimated Number of Non-Gopher Servers Worldwide: Hundreds of thousands.

Annual Growth Rate of Gopher Traffic: 997 percent.

Annual Growth Rate of WWW Traffic: 341,634 percent.

$129; $69 for WinGopher (without TCP/IP)
Notis Systems
(800) 556-6684
(708) 886-0150
Reader Service No. 643

At last, a truly powerful project management software program that can talk with everyone and everything in your company. New Time Line 6.0 for Windows.

Time Line 6.0 brings project management into today's client-server environment. With a powerful new tool set that enables you to manage multiple projects. And a powerful SQL database that lets you share and exchange project data with other high-end SQL databases and core business applications.

In addition, Time Line utilizes OLE 2.0, DDE, and Symantec BasicScript to let you create dynamic links with your other Windows software from Lotus 1-2-3 to Excel.

Which means Time Line can talk with every department in your organization. So you will never again have to waste time re-keying data and checking for typing errors.

The bottom line is integration. You have the information you need to manage multiple projects on-time and on-budget. And the ability to communicate the status of your projects to everyone in your company quickly and effectively.

UNRIVALED POWER FOR MULTI-PROJECT MANAGEMENT.

We know you have more than one project going on at a time. Indeed, you have projects within projects. So we've developed a unique OverView that lets you see the many aspects of even the most complex model simultaneously.

Time Line also provides you with cross-project links and individual, multi-project or shared resource leveling so you can manage your people and resources better.

It all adds up to make Time Line 6.0 for Windows the most powerful project management tool now available to your company.

Of course, Time Line 6.0 will import from and export to the previous version of Time Line for Windows, Time Line 5.0 for DOS and Microsoft Project for Windows.

And for even more powerful project management, you can add on Time Line Report Maker™ and Time Line Guide Maker.™ Our two interactive tools for generating project reports and developing customized project front-ends.

But enough talk. Evaluate Time Line for Windows for yourself.

NEW TIME LINE FOR WINDOWS. THE FIRST PROJECT MANAGER THAT SPEAKS FLUENT SQL, ODBC, BASIC AND OLE.

Finally, powerful project management for today's enterprise computing environment. Time Line 6.0 for Windows speaks your language. And the language of all your enterprise computing resources.

FULLY WORKING 30-DAY VERSION.

Take thirty days to evaluate Time Line for Windows. Watch how it smoothly communicates with every work group and department in your organization. Give it multiple projects and your most difficult tasks. At the end of a month, we're sure you'll enthusiastically recommend it for your next project.

CALL 1-800-628-4777.

Ask for Extension 9319 and order an evaluation copy of Time Line 6.0 for Windows for just $19.95 plus shipping and handling. Or visit your software store.

Offer available in US only. While supplies last. For more information in Canada call 1 800 667 8669

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Circle 122 on reader service card.

Logbook LONG-TERM TESTS: HP 100LX • WordPerfect 6.0 for Windows

HP's Pocket Power: Living the 100LX Life

For more than four months, I've been using Hewlett-Packard's 100LX as a day planner, phone book, and convenient calculator. In these limited capacities, the 100LX is perfect. Additionally, the 100LX comes with Lotus 1-2-3 Release 2.4 and a cc:Mail client built-in (the New Age Apple Newton puts common applications like these on separate PCMCIA cards). It's great to have the features built-in, although I'm no spreadsheet jockey and my varied e-mail habits (Lotus Notes, MCI, CompuServe, and the Internet) don't exactly fit cc:Mail's bill.

Rigorous schedule? Not a problem. The 100LX's appointment module features instant alarms, such as the one reminding me of a 3:00 P.M. staff meeting scheduled every week.

Timing is everything: Hewlett-Packard rolled out its StarLink paging module for the 100LX at the Spring Comdex trade show in Atlanta. Walking around the show floor, I spent more time with my head down in the 100LX than I did looking up at the various exhibits.

I've used several personal digital assistants and retired most after a few frustrating weeks. The 100LX isn't as whizzy as the new stuff, but it's small, light, reliable, and most important, useful. This is one long-term test I want to make permanent. RICHARD SCHWERIN

HP 100LX / Hewlett-Packard / (800) 443-1254 / $549 (1MB of RAM); $749 (2MB of RAM); $119.95 for the DOS Connectivity Pack; $229 for the StarLink paging module, plus monthly charges
Circle No. 66x on Reader Service Card

Logbook Entries:

February 10, 1994: *It works! Using HP's optional DOS Connectivity Pack, I imported a meeting outline (in ASCII) into my 100LX's appointment memo field.*

March 10, 1994: *The 100LX keyboard is too dinky to touch-type on, but the clear layout and dedicated function keys make it quick to use. I wouldn't write anything substantial on it.*

May 23, 1994: *Two and a half months later, I finally have to change the AA batteries.*

May 25, 1994: *I'm a walking newsroom. During the Atlanta Comdex trade show, I get stock info, sports scores, news, and personal pages through HP's new StarLink message card.*

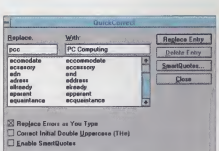
Logbook Entries:

October 19, 1993: *WordPerfect 6.0 for Windows is released with fantastic new features—spreadsheetlike tables, floating menus, and intelligent templates.*

December 6, 1993: *A couple of angry readers accuse me of taking bribes from WordPerfect. They complain of slowness and general protection faults (GPFs).*

January 15, 1994: *I discover what the readers are ticked about when I use the column feature, select a large block of text, cut it, and watch WordPerfect go into virtual cardiac GPF.*

April 6, 1994: *WordPerfect distributes an interim release amid promises that it will fix the GPF and slowness problems.*



Speed and Stability Forgive Faults

For seven months the world of WordPerfect for Windows users was divided into two camps: those like me, who were having only modest, avoidable problems with the word processor, and those like my angry readers, who were experiencing daily crashes and who couldn't get WordPerfect for Windows out of first gear on anything less than a 33MHz 486 with 6MB of memory.

Since I wasn't having critical problems, I waited for the interim bug-fix release and kept using WordPerfect. About once a week I found something else I couldn't do without, like the unique file-handling dialogs that I soon started to use for general file and directory maintenance.

Before long I had completely redesigned my menus, button bars, power bars, and keyboard so that WordPerfect was as much an extension of my fingers as a program could be. But I started encountering some general protection faults, maybe once a week. And periodically the WPCSET.BIF file that contains a lot of my customized settings became corrupted, meaning I had to create them all over again.

Within minutes of getting the 6.0a release, I installed it on my PC. I could tell right away that it was faster. And it seems more stable (although those who upgrade without first deleting the older version continue to have problems). It's even 7MB smaller, down to a mere 28MB. I'm feeling smug. It was worth the crashes and the accusations. RON WHITE

WordPerfect 6.0 for Windows / WordPerfect Corp. / (800) 321-4566, (801) 225-500 / $495; interim release free to registered users of Version 6.0
Circle No. 66z on Reader Service Card

PHOTOGRAPH BY DAVID FERRY

The Contura Aero

7.5 x 10.25 x 1.5 Inches[1]

Powerful 486 Processor

Backlit VGA Screen

Up To 6-Hr. Optional Battery

Instant-On Feature

Optional Docking Base

About 3.5 Pounds[1]

Optional PCMCIA Floppy Drive

Free 3-Year Warranty[2]

Monochrome From $1,399[3]

COMPAQ

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For information via fax on our limited warranty, consult the Compaq Customer Support Center at 1-800-345-1518, select the PaqFax option and request document num

ion. *Size and weight indicated are for the Contura Aero 4/25 Model 84 and Model 170. Model 4/33C pictured here weighs 4.2 lbs. †Batteries and certain options covered by a one-year warranty. Certain restrictions and exclusions may apply. product information, select document number 4010. ‡Estimated reseller price. Prices will vary. Model 4/33C pictured here starting at $2,199. The Intel Inside logo is a registered trademark of the Intel Corporation.

← How to share.

What to share. →

You can make workgroup computing more complex but you can't make it more complete.

They say workgroup computing will require a combination of new and sophisticated technologies on the horizon. They're wrong.

People at the hundreds of companies using Lotus® Notes™ and Lotus SmartSuite™ are already enjoying all the benefits of workgroup computing right now. And it's so easy and so complete, it's almost hard to believe.

*$299 promotional price available while supplies last. **In Canada call 1-800-00-LOTUS. Prices may vary. ©1994 Lotus Development Corporation, 55 Cambridge Parkway, Cambridge, MA 02142. All rights reserved. Lotus, Working Tog

One for all meets all for one.

You already know Lotus SmartSuite is a powerful collection of Windows™ applications, featuring 1-2-3,® Ami Pro® word processor, Freelance Graphics® presentation software, Lotus Approach® relational database and Organizer™ personal information manager. All top rated applications.

What you probably assumed, and rightly so, is what Lotus has equipped them with elegant links to Lotus Notes. If you have Notes, these FX, OLE and API links let you manage and collaborate on work, using information and functions from any of your desktop applications shared in workgroup "libraries" in Notes. So you can work together simultaneously, securely, and even remotely.

Lotus defined groupware, and the power of workgroups, with Notes. And Lotus continues to lead groupware innovations with SmartSuite.

Taking desktop applications to a new level.

The fusion of Notes and SmartSuite actually extends the character and function of these familiar desktop tools.

1-2-3 ceases to be just a spreadsheet and becomes a model management system that lets team members search a library of different versions of worksheets and ranges while maintaining active financial reports equipped with alarms and thresholds that trigger work flow processes.

Ami Pro evolves from word processor to a highly flexible environment for creating and managing the flow of workgroup documents.

Freelance Graphics becomes a presentation management system where team members can work together, or browse through individual slides of past presentations, to create their own custom presentations.

For anyone working with Notes data, Approach database becomes a shared reporting, forms and analysis tool. With Approach and Notes/FX™ sharing data, enterprise-wide, information-intensive workgroup applications are a sudden reality.

NOTES FROM THE FIELD:

To improve productivity, the State of Oklahoma chose to equip many of its public agencies with SmartSuite and Notes. Used by officials for idea and strategy sharing, these applications are also used by thousands of employees around the state with desktop and laptop computers to share information on finance, health, and crime control, among other applications. The move has proven very popular, and more government departments are considering going on line with both SmartSuite and Notes.

Add your own workgroup applications.

As an information manager, the combination of Notes and SmartSuite offers you a powerful set of tools with which to build and deploy a new class of workgroup applications.

These custom applications are fast and easy to build and can fit the specific needs of specific workgroups like a glove, to significantly speed up processes and improve individual and group productivity.

More productive people. A more productive organization.

Your organization doesn't have to be limited to individual productivity. Different people working across different applications can easily be a part of an integrated solution today, with SmartSuite and Notes.

NOTES READY

This unique and highly developed combination of applications has consistently helped individual teams and entire enterprises show dramatic improvements in productivity.

Best of all, you don't have to wait. And you don't have to put together any puzzles. All you have to do is buy two boxes.

For a white paper entitled "The Lotus Notes-Enabled Desktop Strategy" just call **1-800-TRADE-UP, ext. 9866.**** Or you can order your Lotus SmartSuite upgrade for just $299.*

Lotus
Working Together®

Ami Pro, Freelance Graphics, Approach, SmartSuite and Lotus Notes are registered trademarks and Organizer and Notes/FX are trademarks of Lotus Development Corporation. Windows is a trademark of Microsoft Corporation.

Work Better, Faster, and Smarter

1,001

SYNOPSIS

OPERATING ENVIRONMENTS: *The application you use most. Tune it right, and you'll improve practically everything else you do.* **108**

WORD PROCESSORS: *You can do almost anything with a word processor—here's where to start.* **147**

SPREADSHEETS: *The winner for all-around workhorse.* **172**

DATABASES: *Make your database run better so your business does, too.* **184**

Productivity. It's your obsession, and for good reason. Productivity means saved time. It means faster results. Simply put, productivity means **SUCCESS.** That's why you need to improve your productivity, from efficient order processing down to faster file access. And once you buy a product, you want to get the most from it. We want you to get the most from it, too.

Speed Boosts

Life speeds up: Make your system match the pace of your work, step for step, with these special tips.

So we installed nearly 90 major applications like DOS and Windows (of course), and WordPerfect, Microsoft Word, Lotus 1-2-3, Excel, and dBASE. We went hunting for the best secrets, tricks, and **PRODUCTIVITY-BOOSTING TIPS** we could find. We pored over the manuals to see what the vendors left out. We went through bulletin boards and electronic forums to see what questions users were

To-Do Lists

You already know you should be doing what these boxes say. Put them on your agenda today.

tips

Look for tips from **Bill Gates**, Philippe Kahn, and others.

asking. We contacted experts for their best advice. In all, we gathered more than 2,500 tips, then we chose the very best.

And **WE TESTED** them all. Every tip went through *PC Computing* Labs and worked. We'll be honest, though: Sometimes tips work for one person and not another—there are too many variables to guarantee that every tip will work for everyone, every time. If you find one that doesn't, tell us on our electronic forum, PC Contact (see page 234 for information on how to access it via CompuServe).

You'll find advice for **EVERY MAJOR APPLICATION**—probably more than you can absorb at once. When you're tipped out, take a break and flip to page 220 for the most complete guide ever compiled to Easter eggs—those hidden rolling animated cast lists in almost every application.

Time Savers

Read these tips for the ultimate boost to your performance: hardware and software that's easier to use.

PHOTOGRAPH BY DAVID STRICK

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Operating Instructions

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DOS

UPDATE DATE/TIME STAMP

#1 To change the Date/Time stamp for any file, type:

```
COPY filename /B +,,/Y
```

You can apply this command to only one file at a time.

LIKE CHKDSK ON STERDIDS

#2 For more thorough testing of your hard disk than CHKDSK provides, run ScanDisk. If the Surface Scan phase takes too long, you can type SCANDISK/CHECKONLY to bypass that lengthy test.

DOSKEY RECALL

#3 To recall any of your previous commands, use the up arrow key. If you want a complete list of all your DOS commands (memory permitting), hit F7. You'll get a numbered list of all the commands you typed. To use any of these commands, press F9 and type the number of the command you want to run. To clear the list from memory, type Alt-F7.

UNDELETE TRICK

#4 When you delete a file, automatically move it to a temporary directory until you decide whether you need to undelete it. To create that directory, type MD TEMPDELS. Next, open AUTOEXEC.BAT in a text editor such as EDIT and add the following line below the PATH line:

```
LH DOSKEY DEL=COPY $1 ↵
C:\TEMPDELS$*DEL $1
```

If your system is a 286 or earlier, omit the LH. When you type DEL *filename* the file will be copied to C:\TEMPDELS and deleted from its original location. To remove the files forever, move to the \TEMPDELS directory and ignore the error messages.

DOS

Time Saver: COMPLETELY BLOWN AWAY

#5 Until now, **deleting multiple files** in DOS without a wildcard required typing repetitive commands. We have a better way (of course). In a text editor such as EDIT in DOS 6.*x*, add the following line to your AUTOEXEC.BAT file after the PATH line: LH DOSKEY DL=FOR %%A in ($*) DO DEL %%A. If you have a 286 or earlier processor, omit the LH. To use this macro, type DL FILE1 FILE2, and so on.

DOS COMMAND RECALL

#6 If you think DOSKEY takes up too much memory, DOS has another alternative. The F3 key repeats the last command you entered. And F2 followed by any character that appears in the last command you typed repeats it. For example, if you typed CD \APPS\DB4 and you want to move to the \APPS\WP directory, type F2 D. The last command will reappear with the cursor positioned over the D. Then type W, hit Insert, and type P. Another thing that works: Hit the right arrow key at a command line to recall the last command one character at a time.

USE DDSKEY

#7 If you're as forgetful as we are, use DOS's DOSKEY macro package. It lets you create commands that automatically execute a series of other commands. For example, if you always use DOS 6.2's ScanDisk utility with the /AUTOFIX /NOSUMMARY /NOSAVE switches, add this line to AUTOEXEC.BAT:

```
DOSKEY DISKFIX=SCANDISK/AUTOFIX ↵
/NOSUMMARY/NOSAVE
```

When you type DISKFIX, you'll run ScanDisk with your favorite options.

DDUBLESPACE FRAGMENTATION ERRORS

#8 When you try to resize a DoubleSpace drive, you may receive the following error message: "Drive C is too fragmented to resize." Here are steps to take care of the problem. First, defragment the drive by typing DEFRAG /H /Q C: at the DOS command prompt. If running DEFRAG /H /Q C: does not correct the problem, check if you have a delete-tracking program such as MIRROR or the Image utility in Symantec's Norton Utilities installed. If you do, you'll need to remove the read-only, hidden, and system attributes on the file it created

To-Do List

#9 Because many applications let you shell out to a DOS prompt, it's easy to forget that you're still in an application before you turn the computer off. As a matter of practice, **always type EXIT** before you turn off the power so you can return to any active program (including Windows) and exit properly.

#10 Try running CHKDSK under DOS 6.2 and you'll find that the ScanDisk disk analysis and repair utility has replaced it—only it's much, much better. Run ScanDisk to **fix all those lost allocation units.**

#11 After you run ScanDisk, **run DEFRAG,** DOS 6's disk defragmenter—it'll make your hard disk faster.

(MIRORSAV.FIL for MIRROR, IMAGE.IDX for Image) with the ATTRIB -R -H -S command. Then re-run DEFRAG. DoubleSpace should now work.

SCREEN BLANKER

#12 If they can't see your screen, they can't do much snooping. Lots of vendors sell screen-blanking programs, but if you have ANSI.SYS handy it's easy to create your own. For this to work properly, make sure that your CONFIG.SYS file contains a line like DEVICE=\DOS\ANSI.SYS or DEVICEHIGH=\DOS\ANSI.SYS, and that you've booted with this line already in place.

Create two batch files called OFF.BAT and ON.BAT, and store them in a subdirectory (like \BATCH) that you've included in your PATH. First, create OFF.BAT:

```
@REM This is OFF.BAT
@SET P=%PROMPT%
@PROMPT $E[8m

@PROMPT %P%
@SET P=
@CLS
```

Then create ON.BAT:

```
@REM This is ON.BAT
@SET P=%PROMPT%
@PROMPT $E[34;47m

@PROMPT %P%
@SET P=
@CLS
```

Remember that the middle line in each program needs to be blank, and that the "m" at the end of each long @PROMPT line has to be lowercase for this to work. OFF.BAT works by using the ANSI concealed video attribute, which turns the screen off. ON.BAT turns it back on and sets the colors to blue text (34) on a white background (47). If you're walking away from your system, type OFF and the screen will turn black. When you return, type ON and the screen will come back to life with blue-on-white colors.

CELEBRITIP

PRINT SCREEN IN WINDOWS' DOS SESSIONS

#14 Tired of pressing the Print Screen key while running DOS applications inside Windows and having nothing happen? If you run Windows in 386 Enhanced mode, you can restore the Print Screen key to normal operation by opening the application's PIF and checking the PrtSc box under "Reserve Shortcut Keys." (When PIF Editor comes up, click on the Advanced button to display this section.) In DOS sessions started with this PIF file, Windows will pass the keystroke on to the DOS box rather than processing it itself, and the screen will print the way it used to.

JEFF PROSISE
CONTRIBUTING EDITOR

GAIN MEMORY

#13 After running MemMaker you may find that some device drivers and TSRs such as MOUSE.COM load below 640K even though the DOS MEM command reports sufficient upper memory to contain them. This happens because these utilities initially request much more RAM than they actually occupy after they become resident. For instance, MOUSE.COM initially requests 57,200 bytes, but leaves a resident stub of only 17,088 bytes. You can often make this kind of driver load high by moving it closer to the top of CONFIG.SYS or AUTOEXEC.BAT. Make MOUSE the first entry in AUTOEXEC.BAT, or switch to the MOUSE.SYS device driver placed in the CONFIG.SYS. Run MemMaker again and odds are that there will be sufficient room to load the driver into upper memory this time.

Quick Tips

DOS

RUN DOS'S BACKUP UNDER WINDOWS

#15 Although Microsoft doesn't recommend (or support) this procedure, it's possible. Just create a program information file (PIF) with Windows' PIF editor and set Display Usage to Full Screen and Execution to Exclusive. Your CONFIG.SYS should contain FILES=30, BUFFERS=30, and STACKS=9,256. Finally, the OMABufferSize line of SYSTEM.INI (under [386Enh]) should be set to at least 32. You'll probably need to edit the PIF for Backup and supply your options in the Options field.

CUSTOMIZE SCANDISK'S OPERATIONS

#16 ScanDisk has a profusion of option switches to customize its behavior, but there's a better way to customize it. Look for the file SCANDISK.INI in the DOS directory and open it with a text editor. It's well documented (lines that start with a semicolon are comments). Read the documentation, and make any changes you wish so that they'll be the default ScanDisk configuration. Save that file, then type SCANDISK/CUSTOM to direct ScanDisk to your preferred configuration.

MEMMAKER CRASHING?

#17 If your AUTOEXEC.BAT calls another batch file, it will crash and won't configure your system correctly when you run MemMaker. To avoid this, paste the lines from the called batch file into AUTOEXEC.BAT, run MemMaker, and when it's done, paste the modified lines back into their original batch file and remove them from AUTOEXEC.BAT.

ANYTHING YOU CAN DO, I CAN DO BETTER

#18 If you're not happy with the results of MemMaker's tweaking, go back to your original configuration by typing MEMMAKER/UNDO.

PHOTOGRAPH BY DAVID LUTHRELL

Quick Tips

DOS

WHILE RUNNING DEFRAG...

#19 Force DEFRAG to optimize your hard disk to the maximum by adding the /SS- and /SO- flags. Together, these flags tell DEFRAG to sort the files on your disk by date and time, then by size. This places the files you used most recently together on your hard disk. It should give you slightly better performance.

SPACE=DOWN

#20 A space before a directory name in directory-related commands indicates one level down. For instance, typing CD CLIENTS at the D:\123 prompt will take you to D:\123\CLIENTS. You can use this shortcut in other commands as well. For example: If you type COPY *.* KLM at the D:\123\CLIENTS> prompt, you'll copy all the files from D:\123\CLIENTS to D:\123\CLIENTS\KLM.

DIRCMD'S SECRET

#21 If you don't want the curious to see the contents of your directories easily, put the following line in your AUTOEXEC.BAT file:

```
SET DIRCMD= O
```

In setting the Directory Command to a null character (instead of one of the switch letters), the only way to display a directory thereafter is to type the full drive path identification. Thus, at the C:\ prompt, just typing DIR will yield a "File not found" message, suggesting the terrifying possibility that your root directory is empty. Only by typing the full designation, DIR C:\ or DIR F:\WORKS will you see the normal file list. The unsuspecting intruder will think the floppy disk or directory is empty.

DOS'S TED TURNER

#22 Colorize your DOS screen by editing CONFIG.SYS and adding the line:

```
DEVICE=C:\DOS\ANSI.SYS
```

Then, edit AUTOEXEC.BAT and add the command PROMPT $E[;37;44m$P$G. Reboot and your prompt will come out white on a blue background. Type HELP ANSI.SYS to find out what other colors are available.

FREEDOM OF CHOICE

#23 With all of the programs and TSRs you can install today, it's almost impossible to have one boot configuration that works for all situations. That's why you need the Multi-Config feature built into DOS 6.x. Multi-Config is a quick and easy way to set up your system for multiple boot configurations. Your CONFIG.SYS file should look something like this:

```
[Menu]
MENUDEFAULT=WINDOWS1,12
MENUITEM=WINDOWS1, Windows with ↵
↲CD & Sound Card ENABLED
MENUITEM=WINDOWS2, Windows with ↵
↲Network Drivers - No Sound Card or CD
MENUITEM=DOS1, DOS With CD & Network ↵
↲Drivers
[Common]
REM ** THESE COMMANDS EXECUTE ↵
↲WITH ALL CONFIGS **
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE NOEMS
DOS=HIGH,UMB
...etc.
[WINDOWS1]
REM ** This config loads CD-ROM and ↵
↲sound card drivers **
DEVICE=C:\DPT\DPTDDL.SYS
DEVICEHIGH=C:\DPT\TOSHIBA.SYS ↵
↲/D:MSCD01 /N:1 /A:N
DEVICEHIGH=C:\PROAUDIO\MVSOUND. ↵
↲SYS D:3 Q:7 J:O
[WINDOWS2]
REM ** THIS CONFIG LOADS Network Drivers
...etc.
[DOS1]
REM ** THIS CONFIG LOADS CD-ROM AND ↵
↲NETWORK DRIVERS
...etc.
```

Set up your AUTOEXEC.BAT file with matching sections. Directly below each label are the commands that will execute if the configuration is selected. The first commands in your AUTOEXEC.BAT file will be the equivalent of the common area in the CONFIG.SYS file. They're followed by the line GOTO %CONFIG%. This forces only the selected section of the AUTOEXEC.BAT file to run. Here's an AUTOEXEC.BAT file to match the preceding CONFIG.SYS file. Also notice the SET CONFIG= command at the end. It clears the variable, saving valuable environment space:

```
@ECHO OFF
PROMPT $P$G
LH C:\DOS\SHARE.EXE /L:500 /F:5100
GOTO %CONFIG%
:WINDOWS1
PATH=C:\DOS;C:\WINDOWS;C:\EXCEL; ↵
↲C:\WP60;C:\DASH
LH C:\DOS\MSCDEX /D:MSC001 /L:E /A:Y
SET CONFIG=
WIN
GOTO END
:WINDOWS2
PATH=C:\DOS;C:\WINDOWS;C:\EXCEL; ↵
↲C:\WP60;C:\DASH;C:\PROAUDIO
LH C:\DOS\MSCDEX /D:MSC001 /L:E /A:Y
...etc.
:END
```

HARD DISK AUDIT

#24 The following batch file, DIRFINDR.BAT, lists all of the subdirectories on your disk one by one, showing how many files are in them and how much space they take up. It's handy for cleaning up a hard disk. You can also pick where the output goes—printer or screen.

```
@ECHO OFF
REM This is DIRFINDR.BAT
CHOICE /C:PS Output to printer or screen
ECHO Examining this disk...
IF ERRORLEVEL 2 GOTO SCREEN
DIR \/S | FIND "I" > PRN
GOTO END
:SCREEN
DIR \/S | FIND "I" | MORE
:END
```

SAFE DELETION

#25 DEL is a careless command. It prompts you for confirmation on DEL *.* but not for individual files. Add the

Time Saver: EXTEND THE DOS PATH

#26 What if you need to temporarily **add a directory** to your PATH? Do it **on the fly.** Create the following batch file and name it CHGPATH.BAT: @SET PATH=%PATH% PATH %PATH%;%1. To use this batch file, just type CHGPATH *pathname*. For example, type CHGPATH C:\UTILS. You can add several directories by separating them with a semicolon, for example, CHGPATH C:\UTILS;D:\TEMP.

following macro to AUTOEXEC.BAT to take advantage of the new /P switch that prompts for confirmation:

```
DOSKEY DEL=DEL $1/P
```

Because DOSKEY macros precede internal commands, the macro will take over the DEL command.

SYNCHRONIZE FILES

#27 If you need to synchronize files between two disks or directories, here's a solution. In a text editor such as EDIT in DOS 5 or 6.x, create the following batch file and name it SYNC.BAT:

```
@ECHO OFF
ECHO WAIT...
IF %1!==! GOTO MISSING
IF %2!==! GOTO MISSING
REPLACE %1*.* %2 /A
REPLACE %2*.* %1 /A
REPLACE %1*.* %2 /U
REPLACE %2*.* %1 /U
CLS
ECHO SOURCE AND TARGET ARE ↵
↳SYNCHRONIZED!
GOTO END
:MISSING
ECHO SYNTAX: SYNC [SOURCE PATH] ↵
↳[TARGET PATH]
:END
```

This batch file uses the REPLACE command to "fill in" missing files from the source to the target and vice versa, then updates older versions of files on either path. Note: This procedure does not work on subdirectories, only specified paths. Examples: SYNC A:\ B:\ or SYNC C:\TEMP\ D:\BIN\.

SAFE EXIT

#28 To remind yourself that you're shelling to DOS, write batch files to load your applications and change their prompts, as follows (this example is for Lotus 1-2-3, and it sets a red message on a blue background):

```
@ECHO OFF
PROMPT $E[44;31mWarning!! Type EXIT ↵
↳to return to Lotus$E[1;37m$_$P$G
CD\123
123
PROMPT $P$G
CLS
```

Make sure to check that the line DEVICE=C:\DOS\ANSI.SYS is included in your CONFIG.SYS file.

SMOOTH BACKUP

#29 Here's a batch file that lets you copy all files from any directory onto as many preformatted floppy disks as it takes. It prompts you to insert a new blank disk as each subsequent one fills up:

```
@ECHO OFF
ATTRIB -A \*.* /S
:TOP
XCOPY \*.* A: /M /S > NUL
IF ERRORLEVEL 4 IF NOT ERRORLEVEL ↵
↳5 GOTO FULL
GOTO END
:FULL
ECHO Put a new formatted blank disk in %1, ↵
↳THEN
PAUSE
GOTO TOP
:END
```

SMARTDRIVE'S MEMORY HOG

#30 When you install DOS 6, it installs SmartDrive in your AUTOEXEC.BAT file. During the installation, SmartDrive checks out your system to see if it has SCSI or ESDI peripherals, or a Micro Channel bus. If it does, the installation will add SmartDrive with the /DOUBLE_BUFFER parameter. This

Time Saver: DOSKEY

	REPETITIVE TASK	SHORTCUT
#31	Redisplay previous command	↑
#32	Display list of previously issued commands	F7
#33	Repeat a previous command (based on numbered list)	F9
#34	Clear all commands from buffer	ALT-F7
Editing Commands		
#35	Go to the beginning of the line	HOME
#36	Go to the end of the line	END
#37	Delete to the end of the line	CTRL-END
#38	Delete to the beginning of the line	CTRL-HOME
#39	Skip a word to the right or the left	CTRL-→ OR CTRL-←
#40	Display all predefined macros	DOSKEY/M
#41	Clear all macros from memory	ALT-F10

Quick Tips

DOS

ANOTHER USE FOR DELTREE

#42 The DELTREE command in MS-DOS 6.x removes more than just directories. It deletes all files and subdirectories in the directory, regardless of their attributes: Hidden, system, or read-only files all go away under its powerful sweep. By typing DELTREE *filename*, you're tricking it into treating a filename as a directory. DELTREE will prompt you to confirm the deletion. If you don't want to be prompted for the deletion, add the /Y switch: DELTREE /Y *filename*.

DOUBLESPACE CORRUPTED SWAP FILE

#43 When you launch Windows, if you see an error indicating your permanent swap file is corrupt, it probably means your permanent swap file is being created on a DoubleSpace-compressed volume. Windows can't create a permanent swap file on a compressed volume. To correct this, move the permanent swap file to an uncompressed drive.

A NEW DIR TWIST

#44 Files with the attributes *System* or *Hidden* don't show up when you type DIR. If you put a comma immediately after the command (DIR,) they will.

CLEAN BOOT

#45 MS-DOS 6.x supports a clean boot. Just hold down F5 or Shift when you see the "Starting MS-DOS" message, and AUTOEXEC.BAT and CONFIG.SYS won't load. This is great if you accidentally misconfigured your system and it won't boot any more.

CUSTOMIZE DIR

#46 If you always type DIR with the /W switch, make that the default. Edit the AUTOEXEC.BAT file and add the line:

SET DIRCMD=/W

Reboot, and any time you type DIR with no other switches, you'll get the abbreviated /W output. SET DIRCMD works with any of DIR's switches in DOS 5 or later. To override your default, type DIR */-switch*. In our example, typing DIR /-W generates DIR's regular output.

Quick Tips

DOS

WHAT'S WRONG?

#47 Find out what's going on with DOS's Microsoft System Diagnostics (MSD), which tell you what interrupts are used in your system, how the memory is broken up, what kind of video card you have, how big your disk is—just about anything. Run MSD and File, Print Report, Report All and tell it to save as a file. Print the file and you have a handy reference if something goes wrong.

A SUBSTANTIAL TIP

#48 The SUBST command lets you trim a long path name down to a simple drive letter. The command SUBST G \DIR1\DIR2\DIR3 maps drive letter G: to that directory. This command is very useful for shortening your path statements.

SIBLING RIVALRY

#49 To issue commands between sibling subdirectories, such as C:\123\CLIENTS\KLM and C:\123\CLIENTS\TWA, use the following shortcuts: To copy all files to the KLM directory while in TWA, type COPY *.* ..\KLM. To read the directory of KLM while in TWA, type DIR ..\KLM.

DOUBLE PERIOD=UP

#50 Two periods (..) before a directory name in directory-related commands take you up one level. For instance, typing CD .. will take you to \123 from \123\TWA. You may use it in other commands, such as: COPY *.* ..

TRIPLE PERIOD=UP UP

#51 Want to change to the directory two levels above the one in which you're working? If you are on a NetWare volume, type CD ... and the third period will move you one more directory beyond CD ..—this doesn't work with four periods, however.

THE DEVIL OF ALL WILDCARDS

#52 Everybody knows that *.* means all files in a directory. DEL *.* deletes all of the files in the current directory. But did you know that one period does the same thing? DEL . is the shortest distance between you and a disaster—proceed with caution.

option takes up extra memory. See if you can relieve this problem by typing SMARTDRV at a DOS prompt. If you see that none of your disks uses it, remove the /DOUBLE_BUFFER parameter from CONFIG.SYS.

QUICK SEARCH

#53 If you're looking for a specific file or files with a particular extension, but don't know which drive and directory to search, here's a solution. In a text editor such as EDIT in DOS 5 or higher, create WHERES.BAT and save it to a directory listed in your PATH statement (for example, C:\DOS):

```
@ECHO OFF
CLS
ECHO LOOKING FOR %1...
FOR %%d IN (C D E F G) DO DIR %%d:\%1 ↵
↳/S /P
```

Replace the drive letters in the parentheses with your partition and drive letters. To use this batch file, just type WHERES FILENAME. For example: WHERES MYFILE.DOC or WHERES *.ZIP.

FUNCTIONAL FUNCTION KEYS

#54 Your keyboard has ten function keys, but DOS doesn't do anything with them. Yet. By including escape codes in the PROMPT statement of AUTOEXEC.BAT, you can assign keystrokes to the function keys. The escape codes for F1 through F10 are 59 through 68 (that is, F1=59, F2=60, and so on). In a text editor such as EDIT in DOS 6.x, edit your AUTOEXEC.BAT file and modify your PROMPT statement as follows:

```
PROMPT $e[0;59;"DIR/O/P";13p$e[0;60;"↵
↳WIN";13p$P$G
```

This prompt assigns the commands DIR/O/P to F1 and WIN to F2. Each key assignment starts with the escape code $e[and ends with the carriage return code.

There are some caveats. First, DOSKEY uses F7, F8, and F9, so don't program them if you use DOSKEY. Second, you must load the ANSI.SYS driver in your CONFIG.SYS file. Finally, if you receive an "Out of environment space" error, increase the allocated space by modifying the SHELL statement in CONFIG.SYS as follows:

```
SHELL=C:\DOS\COMMAND.COM C:\DOS ↵
↳/E:1024 /P
```

To find out more about escape codes, go to the DOS directory and type HELP. Move to the ANSI.SYS line to view the escape codes for Shift-, Ctrl-, and Alt-key combinations.

FORM FEEDING

#55 Laser printers don't eject paper unless they're told to. If you press Print Screen, you may need to manually eject the paper using the Form Feed button. The same problem occurs if you issue the command TYPE FILENAME>PRN. But it's easy enough to force the printer to eject a page. Using EDIT or another text editor, create the following batch file, and name it EJECT.BAT:

```
@ ECHO OFF
ECHO ♀ > PRN
ECHO ALL DONE!!! PAPER EJECTED!!!
```

To insert the ♀ symbol in EDIT, press Ctrl-P, then hold down Alt and strike the numeric keypad's 1 key, then 2 (with Alt).

DEBUGGING BATCH FILES

#56 MS-DOS 6.2 introduced a batch file debugging utility: COMMAND /Y/C. To troubleshoot your batch files, create a DOSKEY macro by adding the following line to AUTOEXEC.BAT:

```
LH DOSKEY BD=COMMAND/Y/C $1 $2
```

If your system is a 286 or earlier, omit the LH. This macro (BD stands for batch debugger) expects two arguments: the

Speed Boost: DEFRAG AND BOOT FASTER

#57 Suspect that your files are fragmented? That would explain **sluggish performance.** To see if files in a specific directory are fragmented, go to that directory and type CHKDSK *.*. You'll receive a fragmentation report. If necessary, run DEFRAG to correct the problem. **#58** To **avoid the two-second delay** after the "Starting MS-DOS" message is displayed, place the command SWITCHES= /F in CONFIG.SYS.

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To-Do List

#59 Type MEMMAKER at a DOS prompt and Microsoft's built-in memory manager configures your system and potentially **frees up a considerable amount of low memory.** Your programs will run faster and you'll be able to run more of them.

#60 Tired of "Abort, Retry, Fail" and "Abort, Retry, Ignore"? Add the line SHELL=COMMAND.COM /F to CONFIG.SYS. The /F flag tells DOS to **return to the prompt** on your hard drive after three successive attempts to read a floppy disk.

batch filename and its argument. If you have a batch file like our WHERES.BAT, troubleshoot it by typing BD WHERES *.TXT. Press Y on each line prompt until you come across the line with the error.

CD TO ANOTHER DRIVE

#61 Changing to a directory in a different drive is a two-command operation: First you go to the other drive, then you change directories. Here's a better way: In a text editor such as EDIT, type the following batch file and save it as CDD.BAT:

```
@ECHO OFF

IF %1!==! GOTO SYNTAX
IF NOT EXIST %1NUL GOTO ERROR
FOR %%A IN (/%1) DO SET STR=%%A
FOR %%B IN (/%STR%) DO IF %%B!==:! ↵
↲SET FLAG=TRUE
IF %FLAG%!==TRUE! FOR %%C IN ↵
↲(/%1)DO IF EXIST %%C:\NUL %%C:
CD %1>NUL
SET STR=
SET FLAG=
GOTO END
:ERROR
ECHO ERROR: Invalid Path!
:SYNTAX
ECHO Proper syntax: CDD ↵
↲[drive:]\[directory]
ECHO Example: CDD D:\WP51
:END
```

To use CDD.BAT, type CDD DRIVE:\ DIRECTORY. For example, CDD E:\GAMES. If you get an error message (and you've typed the script properly), edit your CONFIG.SYS file, and find the line that starts with SHELL=. There should be a /E:*NNN* qualifier (where *NNN* is a number). Simply increase the value of NNN until the error message goes away.

MULTIPLE TYPE

#62 Because the TYPE command displays only one text file at a time, you need to issue two commands if you want to TYPE the AUTOEXEC.BAT and CONFIG.SYS files. Rather than wasting the keystrokes, create TY.BAT. This batch file displays multiple text files, one at a time, with alternating screen colors. Load the ANSI.SYS driver in the CONFIG.SYS file to take advantage of the screen attributes:

```
@ECHO OFF
SET COLOR=WHITE
REM IN THE FOLLOWING LINE AND ALL ↵
↲SUBSEQUENT ONES, KEEP THE "M" AS ↵
↲LOWERCASE!
ECHO ¬[1;37;44m
:LOOP
IF "%1"== GOTO EXIT
CLS
MORE<%1
ECHO.
PAUSE
SHIFT
GOTO %COLOR%
:WHITE
SET COLOR=GREEN
ECHO ¬[1;32m
GOTO LOOP
:GREEN
SET COLOR=YELLOW
ECHO ¬[1;33m
GOTO LOOP
:YELLOW
SET COLOR=WHITE
ECHO ¬[1;37m
GOTO LOOP
:EXIT
SET COLOR=
ECHO ¬[0m
```

Note: The ¬ symbol above signifies an Escape code. In EDIT, press Ctrl-P, then press Esc. Use TY.BAT like this:

```
TY FILE1 FILE2 FILE3
```

Speed Boost: COMPRESSION SLUGGISH?

#63 If you have a 386 or later, you can **speed DoubleSpace.** First, type DBLSPACE/INFO to locate the uncompressed drive containing the compressed file DBLSPACE.000. Go to the root directory of the drive and type ATTRIB -H -R -S DBLSPACE.INI. Now type EDIT DBLSPACE.INI, and add Enable386=1 as its own line. Save and exit, and at the prompt type ATTRIB +H +R +S DBLSPACE.INI. Reboot for the change to take effect.

Quick Tips

DOS

TELLING TIME

#64 The date and time commands pause and wait for user input. Here's a batch file to show the system date and time without that pause (name it TIMEDATE.BAT or something similar):

```
@ECHO OFF
ECHO | MORE | TIME | FIND ↵
↲/V "NEW"
ECHO | MORE | DATE | FIND ↵
↲/V "NEW"
```

QUICK HELP

#65 If you don't want to waste time going into DOS's Help facility when all you need is a command switch, type the command followed by /?. This produces a quick list of all parameters the command can take. The same thing happens if you type FASTHELP followed by the name of the command.

PATH QUICK CHANGE

#66 When you change your PATH a bit, how do you get the original back? Don't type, that's for sure. And never reboot. Save your PATH setting to disk: Type PATH > SPATH.BAT before you change it. When you want your original PATH back, change to the directory that contains SPATH.BAT and type SPATH.

MORE PATH FUN

#67 DOS's PATH= statement is limited to 122 characters (127 characters minus 5 for PATH=). That's a drag. In DOS 6.x you can eliminate this shortcoming by putting PATH into AUTOEXEC.BAT. Edit AUTOEXEC.BAT and add the statement: SET PATH=dir1;dir2;. Note: You shouldn't use the PATH statement unless you want to replace the current PATH, nor should you use the DOS %PATH%.

NONCONFIRMING DELETE

#68 For those times when you don't want your DEL *.* command to ask if you're sure you want to delete a directory, create a batch file called ECHO Y|DEL *.* in your DOS directory. Save the file and, when you want to delete everything in a directory, just type the name of that batch file (although implementing this is probably not the safest idea around).

OPERATING ENVIRONMENTS: Run Your CONFIG.SYS One Line at a Time • Check for Security Problems

Quick Tips

DOS

STEP-BY-STEP BOOTING

#69 If you edit your CONFIG.SYS or AUTOEXEC.BAT, or install a peripheral and suddenly find your computer halts during startup, reboot and press F8 when you see the "Starting MS-DOS" message. This will cause DOS to step through CONFIG.SYS one line at a time and ask if you want to execute a command or skip it. Once it's finished with CONFIG.SYS, it will ask you if you want to run AUTOEXEC.BAT.

IDENTIFY COMPRESSION LEVEL

#70 If you use DoubleSpace, you know that it estimates your free disk space by figuring that it can compress files a fixed amount. This estimate can be wrong, but you can fix it by typing

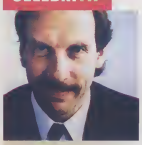
```
DIR /C /S
```

and looking at the compression rate DoubleSpace is really getting for your files. Now, use

```
DOUBLESPACE /RATIO
```

to set DoubleSpace right.

CELEBRITIP



FIND SECRET FILES

#71 FERRET.BAT ferrets out any files with suspicious names:

```
@ECHO OFF
REM This is ↵
↳FERRET.BAT
FOR %%A IN (SECRET↵
↳CONFID PRIVAT) DO↵
↳ATTRIB \%%A*.*/S↵
↳>> BADNAMES
```

This identifies files like SECRETX.94. Change the names in the parentheses to any filename you wish to protect.

PAUL SOMERSON
VICE PRESIDENT AND EDITORIAL DIRECTOR

A MOVING EXPERIENCE

#72 You can create a batch file to overcome a limitation of DOS 6's MOVE command. Normally, it requires a destination directory parameter, even if you're moving files into the current directory. In your DOS directory, type EDIT MV.BAT and enter the following lines:

```
@ECHO OFF
SET FROM=%1
SET TO=%2
IF "%TO%"=="" SET TO=.
MOVE %FROM% %TO%
```

Save the file. If you use MV instead of MOVE, you won't need to specify the destination.

REBOOT IN BATCH FILE

#73 Every once in a while, you want to reboot your system from within a batch file. For you, RESTART.COM is a small but handy utility. In a text editor such as EDIT, type the following lines:

```
N RESTART.COM
E 100 b8 40 00 8e d8
E 105 b8 34 12 bb 72
E 10a 00 89 07 ea 00
E 10f 00 ff ff
RCX
18
W
Q
```

Save the file as RESTART.SCR. To create RESTART.COM, type DEBUG<RESTART.SCR. You may now add the RESTART line to your batch file. Warning: Do not launch RESTART.COM from within Windows or you'll lose unsaved files!

AUTO BACKUP

#74 If you want to back up only when you have a specific number of new files on your disk, read on. Create a batch file to count all new files based on the Archive bit set at the time of the BACKUP or XCOPY commands. Name the following file NEWBAKS.BAT:

```
@ECHO OFF
CLS
REM NOTE: IN THE NEXT LINE, TYPE AN↵
↳EXTRA SPACE AT THE END.
CHOICE/C:YN Do you want to count files ↵
↳that need to be backed up
IF ERRORLEVEL 2 GOTO END
IF ERRORLEVEL 1 GOTO DOIT
:DOIT
CLS
ECHO COUNTING....
DIR C:\*.* /AA /S>BU
TYPE BU|FIND /C "-" >BU
ECHO new files to backup>>BU
CLS
ECHO Here they are
TYPE BU
PAUSE
:END
```

Save NEWBAKS.BAT in a directory that's in your PATH statement, and add the line CALL NEWBAKS to AUTOEXEC.BAT following the PATH line. Note: This batch file works only in DOS 6.x because CHOICE is new to 6.x.

Time Saver: NAVIGATING THE DOS TREE STRUCTURE

	REPETITIVE TASK	SHORTCUT
#75	Switch to another directory	CD*DIRECTORY*
#76	Go to the root directory	CD\
#77	Go one level up	CD..
#78	Go one level down	CD *DIRECTORY*
#79	Make a lateral move	CD..*DIRECTORY*
#80	Create a directory directly below the one you're in	MD *DIRECTORY*
#81	Remove a directory, including files and subdirectories	DELTREE *DIRECTORY*
#82	Rename a directory	MOVE *DIRECTORY*
#83	Copy a file to a directory that is one level up	COPY *FILE* ..
#84	Copy a file to a lateral directory	COPY *FILE* ..*DIRECTORY*
#85	Delete a file in a directory that is one level down	DEL *DIRECTORY**FILE*
#86	List files in a directory that is one level down	DIR *DIRECTORY*
#87	Delete all the files in a directory that is one level up	DEL ..

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Quick Tips

DOS UTILITIES

NORTON UTILITIES 8.0 MULTIPLE IMAGES

#88 If you have more than one drive letter (for example, if you have two hard disks, external devices, multiple partitions, or use compression) make sure to run the Norton Image utility on all of them. Run NUICONFIG, choose Startup Programs, select Save Format Data, and check each drive box.

NORTON DISK DOCTOR

#89 Run Norton Disk Doctor every time you start your computer. The boot procedure will require a few more seconds, but it's well worth the protection that Disk Doctor provides. To set it up, run NUCONFIG, choose Startup Programs, Diagnose Disk Problems, and Configure. Select all of your local drives, choose OK, and Save.

NORTON UTILITIES 7.0 TAKE SNAPSHOTS

#90 Norton Change Directory (NCD) takes a snapshot of your disk's structure. Update the snapshot whenever you install new software that creates new directories on the disk. To refresh the snapshot, press F2 then Y.

RENAME A DIRECTORY

#91 Prior to Version 6.2, DOS didn't have a command for renaming directories. In NCD, all you need to do is press F6 on a directory you wish to rename.

FILE FIND

#92 The File Find utility (most people rename it FF.EXE) quickly finds specific files on any of your drives. You can specify a date range, size range, and specific file attributes. Just press F4 in the File Find screen to set the search options.

FILE FIX

#93 File Fix can repair many files that seem damaged or lost. Before you give up and delete that Lotus 1-2-3, Borland Quattro Pro, Microsoft Excel spreadsheet, or Borland dBASE or WordPerfect file, see what magic Norton can perform on your ailing data. Just type FILEFIX and follow the bouncing ball.

YES, YES, YES, CHKDSK

#94 Under DOS 6.2, CHKDSK requires a yes or no response, and you really want to save yourself that one keystroke. To do so, create the file CHECK.BAT in a text editor such as EDIT, as follows:

```
@ECHO OFF
ECHO Y|CHKDSK/F
```

Save CHECK.BAT in a directory in your Path. Now, when you run CHECK instead of CHKDSK/F, you won't be prompted for a yes or no response.

DOS UTILITIES

NORTON UTILITIES 8.0 BEFORE YOU DIAL 9-1-1

#95 As a preventive measure, use Rescue to create a system backup disk. Rescue saves important system files (CMOS values, partition tables, the boot record, and DOS startup files) and any device drivers that your system requires to start (compression drivers and the like) onto a floppy disk. In the event of an emergency, your Rescue disk spares you hours of frustration and brings your system back up quickly and easily. Keep your Rescue disk in a clean, dry place away from magnets, and remember where you put it. Create a new Rescue disk whenever you make substantial system changes.

NORTON UTILITIES 7.0 QUICK HARD-DISK NAVIGATION

#96 Norton Change Directory (NCD) is a more efficient tool for handling your hard disk structure than many DOS commands combined. For example, to go to the directory \APPS\WP51\FILES\1992, just type NCD 19. If this brings up another directory that starts with the same characters, repeat the command. Better yet, type NCD, and when the tree comes up, use the arrow keys or type 19 to get to the directory. While in the tree view, pressing Ctrl-Enter will take you to the next match.

PKWARE PKZIP ADD AND REMOVE FILES

#97 You probably already know the simple syntax for PKZip (PKZIP ZIPFILE *FILENAME*). That's easy. Here are some quick ways to perform common actions. First, to add files to an archive, use PKZIP -A ZIPFILE *FILENAME*. When you're adding, you can vary the compression level with a command such as, PKZIP -A -EX ZIPFILE *FILENAME*. This command adds extra compression.

UNZIPPING TRICKS

#98 When you're running PKUnzip, try these command variants. To unzip the file and restore the directory structure that's in the ZIP file, use PKUNZIP -D ZIPFILE. When updating an application, use PKUNZIP -O ZIPFILE to overwrite existing files.

Time Saver: DIR SWITCHES IN DOS

	REPETITIVE TASK	SHORTCUT
#99	Pause after each full screen of display	/P
#100	View to the width of the screen (without size or date)	/W
#101	List all files	,
#102	List hidden files	/AH
#103	List read-only files	/AR
#104	List system files	/AS
#105	List files sorted by filename	/O
#106	List files sorted by date	/OD
#107	List files sorted by extension	/OT
#108	List files sorted by size	/OS
#109	List only filenames, including the period	/B
#110	List files in a directory including all subdirectories	/S
#111	Display the DoubleSpace compression ratio	/C
#112	Set the default switch (in the AUTOEXEC.BAT)	SET DIRCMD=/*SWITCH*

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WINDOWS

MICROSOFT WINDOWS 3.1 QUICK ENVIRONMENT ADJUSTMENT

#113 Ever encounter an "Out of environment space" error message when running DOS under Windows? You don't need to edit your CONFIG.SYS file's SHELL= line to get things working right. Instead, open DOSPROMPT.PIF with PIF Editor. In the Optional Parameters: box, type /E:800, then save your changes and exit. This expands the environment space for your DOS session to 800 bytes. If you still get "Out of environment space" messages, increase the number until the errors go away.

FINE-TUNE YOUR MOUSE

#114 You want your mouse pointer to move as if there were a hungry tabby on its trail. When you set up a new PC, open the Control Panel, click on the Mouse icon, and slide the Sensitivity slider all the way to the right. This works on almost every system, except notebooks like IBM's ThinkPad, that is—the built-in pointing device is great, but it's tricky to maneuver at warp speed. On those systems, the Sensitivity slider should go almost all the way to the left.

REMEMBER: IT'S DOS

#115 With full-screen DOS sessions, it's easy to forget that you're still running Windows. But with Windows 3.1 there's an easy way to remind yourself that you're shelled out to DOS so that you don't carelessly run CHKDSK or try to use a disk-utility program. Using a text editor such as Notepad, open AUTOEXEC.BAT and find the PROMPT statement that defines your DOS prompt. Add this line after it:

```
SET WINPMT=$e[1;31mWARNING!!! Type ↵
↵EXIT to return to Windows!$e[1;37m$_$p$g
```

This displays a red message that is very hard to miss. You can change the text that follows WINPMT= to any prompt you want, and you can use any of the special characters allowed in normal PROMPT statements. Reboot your computer and start Windows. When you shell out to DOS, you'll see a prompt that is different from the ordinary DOS prompt.

TOO MANY FONTS?

#116 Windows loads very slowly when it carries the heavy baggage of too many fonts. You may need all those fonts when you use a desktop publishing program, but you want a speedier startup procedure for other applications. Make a copy of your WIN.INI file and name it WIN.FNT. Using a text editor such as EDIT or SYSEDIT in Windows, search for FOT. Insert a semicolon in front of each line that loads a TrueType font, such as ONYX BT (TRUETYPE)=TT0519M_;FOT, to disable the entire line. Leave Arial, Times New Roman, Courier, and your favorite fonts intact (you need some fonts to work). Resave WIN.INI, and the next time you load Windows, it will come up significantly faster. You may also notice an increase in the available Windows Memory (at Program Manager, select Help, About

Time Saver: DOS EDIT

	REPETITIVE TASK	SHORTCUT
#117	Select entire line (regardless of cursor position)	SHIFT-↓
#118	Select one word	SHIFT-CTRL-→
#119	Switch from insert to overwrite mode	CTRL-V
#120	Delete to the end of one word	CTRL-T
#121	Delete a whole line (regardless of cursor position)	CTRL-Y
#122	Delete to the end of the line from cursor position	CTRL-Q, Y
#123	Cut selected text to clipboard	ALT-E, T OR SHIFT-DEL
#124	Copy selected text to clipboard	ALT-E, C OR CTRL-INS
#125	Paste from clipboard	ALT-E, P OR SHIFT-INS
#126	Save and exit	ALT-F, X, Y

Quick Tips

WINDOWS 3.1

MORE ICONS

#127 If you want your icons closer together, edit your WIN.INI file in any text editor and go to the [Desktop] section. Add the line IconVerticalSpacing=44. Save, exit, and restart Windows. This will place icons neatly on top of each other. You can experiment with the value.

LOAD NO DOS MOUSE

#128 If you don't use a mouse for any of the DOS applications you run, don't load it. Make sure neither AUTOEXEC.BAT nor CONFIG.SYS loads any file that even vaguely looks like MOUSE.SYS or MOUSE.COM. That will save around 17K of memory.

DOS SESSION FONTS

#129 As long as you're messing around with your DOS session, try changing the onscreen font. Select Control Menu (the minus button at the left of the title bar), Fonts. A dialog box will give you a choice of a wide variety of fonts and show you how much space the window will take if you select that font.

24-HOUR CLOCK

#130 If you prefer 24-hour time, edit WIN.INI, go to the [Intl] section, and change the line iTime=0 to iTime=1.

FAST DISK

#131 To boost I/O performance, go into the Control Panel's Enhanced option. Select Virtual Memory, Change and turn on Use 32-bit File Access and Use 32-bit Disk Access. You should see a 5 to 10 percent performance improvement in everyday activity.

BACK TO THE WAY YOU WERE

#132 If you have deleted program groups or icons and want a quick way to restore them, go to Program Manager and select File, Run. In the Command Line field, type SETUP /P. This won't do away with additional icons and groups you've installed, it will just restore the ones you've deleted.

Quick Tips

WINDOWS 3.1

SOUND ADVICE

#133 Use your sound card's mixer program to create a Program Manager item that silences your system's sounds fast. The Pocket Mixer program included with Media Vision's Pro Audio Spectrum 16, for example, lets you store alternate settings in a file. Open the Mixer utility, turn the volume all the way down, and save the settings in a file called MUTE.MIX. Now copy the Pocket Mixer program icon and edit the command line, adding MUTE.MIX as a parameter. You now have an instant silencer.

MAINTENANCE MODE SETUP

#134 If you can't get into Windows to change specific hardware settings (such as video driver or mouse driver) you can go into "maintenance mode setup" from MS-DOS. To do this, type SETUP from the WINDOWS directory in MS-DOS.

BURNING THE MIDNIGHT OIL

#135 Some people lose all sense of time when they work. Make sure the clock is always visible by clicking once on the minimized clock icon and selecting "Always on top." The clock program will also display the time and date when minimized.

Speed Boost: DOS UNDER WINDOWS

#136 You can **control how fast your DOS sessions run** under Windows by controlling what percent of the CPU's attention they get. Run a DOS session and select System, Settings. Increase the Foreground and Background priority settings. The higher the number, the more attention the DOS session will get. Try doubling the default values for a start.

Program Manager to view your available memory). For those occasions when you do need all of your fonts, rename WIN.INI as WIN.OLD (or a similar name), and copy WIN.FNT to WIN.INI.

RESTRICT WINDOWS

#137 Windows isn't very secure, but you can make it less vulnerable to accidental customizations and edits. Edit PROGMAN.INI and find the section called [Restrictions]. If it doesn't exist, create it. Then you can keep people from fooling around with your setup by adding any or all of the following commands:

EditLevel=4	Disables creation, deletion, or changing of program groups and items.
NoSaveSettings=1	Keeps Windows from saving settings.
NoRun=1	Disables File, Run.
NoClose=1	Makes it impossible to exit Windows gracefully (you can still reboot).
NoFileMenu=1	Removes the File menu and its shortcut keys.

NO MORE INSTRUCTIONS!

#138 After you've seen them a few times, you'll probably memorize the DOS session instructions that Windows 3.1 provides every time you shell out to DOS. Fortunately, it's easy to remove that screen so that your DOS sessions begin with a pristine C:\ prompt. Using a text editor such as Notepad, open SYSTEM.INI. In the section labeled [386Enh], add the following line:

```
DOSPromptExitInstruc=no
```

Save your changes, then exit and restart Windows. When you shell out to DOS, the instructions will no longer clutter your screen. You'll see only Microsoft's copyright message followed by the prompt.

SHARING A MICROSOFT MOUSE

#139 You share your PC with a left-handed colleague who wants Windows to start with the mouse buttons swapped—without having to use the Control Panel. Go to the \WINDOWS directory and copy MOUSE.INI to MOUSE.RH and MOUSE.LH. If you can't find MOUSE.INI in the Windows directory, look for it in \MSMOUSE. Make MOUSE.LH a "left-handed" file by editing it in a text editor, as follows: Change the lines PrimaryButton=1 and SecondaryButton=3 to PrimaryButton=3 and SecondaryButton=1. If these lines are not already there, type them in. Next, edit the batch file that calls Windows (usually AUTOEXEC.BAT). Insert the following lines before the WIN command:

```
CHOICE "Are you a left-handed mouse user? ↵
↳(Y/N) "
IF ERRORLEVEL 2 COPY \MSMOUSE ↵
↳\MOUSE.RH \MSMOUSE\MOUSE.INI
IF ERRORLEVEL 1 IF NOT ERRORLEVEL 2
COPY \MSMOUSE\MOUSE.LH \MSMOUSE ↵
↳\MOUSE.INI
```

REMOTE PRINTING

#140 If you print your files at a location that doesn't have your application or fonts, you may find that your document doesn't come out looking at all like what you want. You can correct this situation with a bit of Sneakernet savvy. Set up Windows with the remote printer's driver. In the Control Panel, select Printers, Connect and set up File as the port to print to. When you select this printer during a print job, Windows will prompt you for a filename. If you have a disk in drive A:, type A:FILENAME.PRN. For example, A:NWSLTR.PRN. Take that disk to a computer that's attached to the printer and type

```
COPY A:\NWSLTR.PRN LPT1: /B
```

at a DOS prompt. Substitute the drive letter and the printer port as needed.

USE NOEMM SETTING IN SYSTEM.INI

#141 Modern applications almost never use expanded (EMS) memory. You're only two-thirds of the way there if you add NOEMM to the EMM386 line in CONFIG.SYS and set EMMSIZE=0 in the [386Enh] section of SYSTEM.INI. Even if you set the latter line to 0, Windows still (unnecessarily) loads the EMM driver. So do what we've done and give your RAM some breathing room by adding the following line right after EMMSize=0 in SYSTEM.INI:

```
NoEMMDriver=ON
```

MAKE SURE FILES AND BUFFERS ARE SET HIGH ENOUGH

#142 Sometimes that out-of-memory error message means something completely different. Windows might just have run out of available file handles or buffers. Many systems come preconfigured with a woefully minimal 30 files and 10 buffers set in CONFIG.SYS. Ha! Try setting both numbers much higher depending on the

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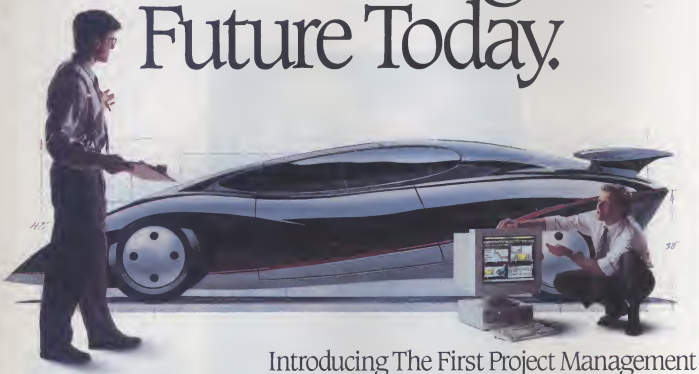

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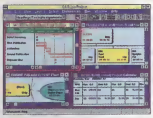

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To-Do List

#143 Use Alt-Tab to **cycle through applications** in Windows 3.1. Try Alt-Shift-Tab to go backward. This shortcut is called the Cool Switch for obvious reasons.
#144 Don't like Windows 3.1's maximize icon? **Double-click on an app's title bar** to run it full-screen. Double-click again to restore the window's original size.
#145 To use your **mouse in a DOS box,** open your SYSTEM.INI file. Under the heading [NonWindowsApp], change the MouseInDosBox setting from 1 to 0.

applications you run most often. Set FILES=50 and BUFFERS=20 as a bare minimum. If you use more than one large application at a time, bump the settings to 80 and 30, respectively. If you regularly work with many large applications, including a database, kick the numbers to 120 and 80. You'll pay a price in conventional memory, but if you use Windows applications exclusively, that's irrelevant.

CELEBRITIP

NORTON'S NDIAGS FINDS PROBLEMS

#149 If you are experiencing intermittent lockups or other unexplainable problems, try NDIAGS. It provides a /BURNIN switch that runs NDIAGS through several iterations to completely check your machine. /BURNIN is particularly useful when purchasing a new computer. Place formatted disks in all of the floppy drives, attach loopback plugs to the ports (when available), and run NDIAGS overnight as follows:

```
NDIAGS /BURNIN:100 /NONOTES ↵
↳ /REP:NDIAGS.TXT
```

The result of this test will be in the NDIAGS.TXT file on the hard disk.

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TWO CONFIGURATIONS

#146 It never fails. As soon as you've finished arranging Windows to your liking, an office mate rearranges everything: windows, icons, and wallpapers. You need two configurations, one for you and one for your colleague. Arrange Program Manager and File Manager according to your preferences. Save this setup by making sure that Save Settings on Exit is selected under the Options menu, then exit Windows. Change to your Windows directory (usually \WINDOWS), and type:

```
COPY WIN.INI WIN.IN1
COPY SYSTEM.INI SYSTEM.IN1
COPY PROGMAN.INI PROGMAN.IN1
COPY *.GRP *.GR1
```

Return to Windows, let your colleague rearrange everything, save, and exit. Then type:

```
COPY WIN.INI WIN.IN2
COPY SYSTEM.INI SYSTEM.IN2
COPY PROGMAN.INI PROGMAN.IN2
COPY *.GRP *.GR2
```

Repeat the process for each additional user. Then create a batch file called WIN1.BAT as follows:

```
@ECHO OFF
CD \WINDOWS
COPY *.IN1 *.INI
COPY *.GR1 *.GRP
WIN
```

Repeat the process for WIN2.BAT, WIN3.BAT, and so on. User 1 should load Windows by typing WIN1 rather than just WIN. User 2 should type WIN2, and so on for each user. Note: If you install a new application and need to update the setting, the entire process needs to be repeated.

BACK UP SYSTEM.INI AND WIN.INI

#147 Even if you back up the rest of your system only as often as Halley's Comet appears, back up these two files regularly. Someday a rogue application will change one byte in one of these files and cause Windows to go to never-never land. When it does, you'll replace the appropriate INI file with its backup, and you'll be back in business.

KEEP YOUR TRUETYPE FONT LIST LEAN AND MEAN

#148 Unnecessary TrueType fonts take up huge chunks of memory and slow system performance. Periodically go into the Fonts

Quick Tips

WINDOWS 3.1

EASY SELECTION
#150 To select the menu in any Windows app, press Alt or F10.

SPEED UP RESPONSE
#151 Running Windows on a 286 is, well, slow. Edit SYSTEM.INI, go to the [Standard] section, and add the line

Fastermode Switch=1

to make Windows respond more quickly to hardware interrupts on 286-based machines only.

MOUSELESS NAVIGATION #1
#152 In Program Manager, type the first letter of an icon's name to select it. Hit Enter to launch the program behind it.

MOUSELESS NAVIGATION #2
#153 If you're tired of hunting for an application's icon to run it, try File, Run in Program Manager.

Speed Boost: CLEAN UP

#154 Version 6.2 of DOS doesn't come with DOSSHELL, the clunky file-management utility Microsoft introduced in Version 4. If you find DOSSHELL-related files in your DOS directory, **save some disk space** and delete them by typing DEL DOSSHELL.*.

In addition, if you use a compression utility other than DoubleSpace—Stacker or SuperStor, for instance—delete all of the existing DBLSPACE files. While you're in the neighborhood, look for any file with a date older than September 30, 1993 (DOS 6.2), and seriously consider whether those files really deserve the disk space that they're taking.

PHOTOGRAPH BY DARRYL ESTRINE/ONYX

Quick Tips

WINDOWS 3.1

TYPE AS FAST AS YOU CAN

#155 If you type very fast, you can fill Windows' keyboard buffer, causing characters to disappear. To increase the keyboard buffer size, edit WIN.INI and go to the [Desktop] section. Set TypeAhead= and specify a number from 0 to 2,047 (bigger is better).

EXPANDED MEMORY

#156 To provide expanded memory to your DOS applications that need EMS, create a PIF for the program's EXE and specify the amount of EMS you prefer. For example, if you need 2MB of Expanded memory for your application, specify 2,048 for the EMS Memory: KB Required field in the PIF editor.

ICON SEE CLEARLY NOW

#157 Windows and most Windows applications include an extensive list of icons. To get an idea of how many, go into Program Manager, select an application, and hit Alt-Enter to bring up its properties. Click on Change Icon, Browse and open MORICONS.DLL. You'll see lots of icons. Want more? Open PROGMAN.EXE or any Windows EXE, ICO, or DLL to see what icons it holds.

NEW PROGRAM MANAGER ITEMS

#158 Add an item to Program Manager just by dragging it from File Manager. If the item is a Windows program, you'll probably get a nice icon, too.

NOT TONIGHT, NORTON

#159 If you're using Norton Desktop for Windows or PC Tools for Windows as your shell, you may occasionally need to launch good old Program Manager. To do so when you launch Windows, type WIN PROGMAN. To load Program Manager from within Windows, select File, Run (or whatever your shell calls this operation) and type PROGMAN.

SMARTDRIVE AND BUFFERS

#160 Using SmartDrive reduces the number of DOS buffers you need. Edit CONFIG.SYS and change BUFFERS=# to 15.

section of Control Panel and weed out fonts you don't use often. Better yet, use a font-management utility to swap fonts in and out only as needed. The one found in Microsoft's TrueType Font Pack works well, and there are great shareware options as well.

MONITOR SYSTEM RESOURCES

#161 What's the most frustrating part of Windows? By a unanimous vote, we declare the winner to be the group of puny 64K "resource heaps" Windows doles out for applications to use. Savvy Windows users watch those numbers like hawks with the help of Program Manager or one of dozens of third-party utilities. Any time free system resources (FSR) dip below the 30-percent marker, you're on shaky ground. Consider shutting down one or more applications before starting another. If you're about to work with a crucial application or file, and system stability is at the top of your list, try restarting Windows to push FSRs to their maximum.

TROUBLESHOOTING STARTUP

#162 When Windows refuses to load properly, the first diagnostic tactic is to run WIN/B at the command prompt. The /B switch creates a text file called BOOTLOG.TXT in your Windows directory. The log will sometimes point out the name of the Windows component that needs to be replaced or updated. To temporarily disable certain Windows features and track down potential problems, try these startup switches: /D:X excludes the entire upper memory block (UMB) area; /D:V shuts down Windows' ability to handle hard-disk interrupts; /D:S disables system ROM breakpoint searching; /D:F turns off 32-bit disk access; and /S starts Windows in Standard mode. If Windows will start with only one of these settings, your task is a lot easier.

I'D LIKE TO BE LIKE MAC

#163 The PC is not a Macintosh, but you can easily create a "kinda sorta" trash can. First, create a directory called \TRASHCAN by selecting File, Create Directory in File Manager. Now double-click on that directory name, and hit the Restore button if it's maximized. Double-click on the drive letter, and then on any directory you commonly work with (that opens a second window), and select its Restore button. Maximize File Manager, minimize \TRASHCAN, and arrange the size of the other directory's window to your liking. To save the settings, check the "Save settings on exit" bar in the Options menu and Shift-double-click on the Control Menu (the button at the left of the title bar). From now on, you may Shift-drag files from any directory to the trash can icon, just like you would on a Mac. Remember to clear the contents of the TRASHCAN directory every once in a while.

MOVING TRUETYPE FONTS

#164 You can free up disk space on the Windows drive by moving TrueType fonts to another drive. First copy all *.TTF files from the \WINDOWS\SYSTEM directory to the DRIVE:\DIRECTORY in which you want to store them. Next run the Control Panel and select the Fonts icon to bring up the Fonts dialog box. In the Fonts dialog box, select all of the TrueType fonts in the list, select the Remove button, and select the "Delete font file from disk" checkbox. Go back to the Control Panel and select the Fonts icon to bring up the Fonts dialog box. In the Fonts dialog box, select the Add button, then select the DRIVE:\DIRECTORY to which you have moved the *.TTF files. After Windows has searched for and found the font files, click on Select All, uncheck the "Copy fonts to Windows directory" option, and click on OK. At this point the *.FOT files will be re-created, the entries in WIN.INI will be updated, and the TrueType fonts will operate normally from their new location.

OPEN MULTIPLE DOCUMENTS

#165 Notepad and Paintbrush are not multiple document interface–compliant, which means you can open only one document at a time. If you need to cut and paste between documents, it can get tedious. The solution is easier than you think. Open multiple instances of Notepad or Paintbrush with different documents in each, and perform the clipboard operations. These programs are small enough that they shouldn't bog down your system.

PRINTING FROM TERMINAL

#166 To print the information from Terminal to a printer, use Printer Echo. Turn on Printer Echo by choosing it from the Settings menu in Terminal. All of the information displayed on the screen is captured in a buffer, and when a complete page of information is stored in the buffer, printing begins. Terminal will continue

CELEBRITIP

REPLACE MICROSOFT'S AD SCREEN WITH YOUR OWN

#167 Tired of the Windows splash screen? Replace it with your own.

You need a bitmap (BMP) file converted to RLE format. Try Paint Shop Pro. Download PNTSHP.ZIP from PC Contact's data library 3 (Utilities/Misc.). See page 232 for more information.

Create backups of WIN.COM from the Windows directory and VGALOGO.RLE from WINDOWS\SYSTEM. If something goes wrong, you can restore them.

Make sure you have a VGA or better monitor that can display 16 or more colors and a 16-color BMP no larger than 640 by 480 pixels. Open your BMP file in Paint Shop Pro, select File, Save As and save it in your WINDOWS\SYSTEM directory as VGALOGO.RLE. The RLE file cannot be larger than about 50,000 bytes. If it is, shrink it in Paint Shop Pro, then fill the space around it in PaintBrush using a solid color.

Then exit Windows to a DOS prompt. Use the following DOS commands to create a new WIN.COM file in your Windows directory:

```
C:
CD \WINDOWS\SYSTEM
COPY /B WIN.CNF+VGALOGO.LGO+
VGALOGO.RLE
C:\WINDOWS\WIN.COM
```

Type DIR \WINDOWS\WIN.* to see if WIN.COM is less than 65,536 bytes. If not, restore your backup WIN.COM, restart Windows, and repeat the steps with a smaller RLE file.

BRIAN LIVINGSTON
CONTRIBUTING EDITOR

to print one page at a time as the buffer fills. The printout will consist of every line and command issued within the Terminal session. If you would like to dump the buffer to the printer manually, turn Printer Echo off by choosing it again from the Settings menu during the session. This will dump the contents of the buffer to the printer.

LOGICAL GROUPING

#168 If you primarily use Windows to launch the same applications, create a special group to hold them. Open Program Manager and select File, New, Program Group. Name it something like Applications. Now open the program groups that include the icons of your favorite applications, and hold down Ctrl as you drag the icons into your new Applications folder. Holding down Ctrl copies the icons, rather than moving them. Next, maximize the Applications folder and save your settings. Now your main Program Manager desktop will be a kind of quick-launch tool.

PS/2 MOUSE HANGS WHEN EXITING

#169 Some IBM PS/2 models seem to hang when you exit Windows 3.1, but after a delay, they return you to the DOS prompt. This is because the system waits for the mouse port to reinitialize. This problem is worst on PS/2 models 56 and 57, but it's also noticeable on models 90 and 95. Correct the problem by adding the following line to the [386Enh] section of SYSTEM.INI:

```
InitPS2MouseAtExit=FALSE
```

WINDOWS FOR WORKGROUPS 3.11 SET YOUR HARD DISK TO WARP SPEED

#170 There's gold buried deep under the 386 Enhanced icon in the Control Panel of Windows for Workgroups 3.11. Click on the Virtual Memory button, then Change. Turn on 32-bit disk access if your disk controller supports it, and enable 32-bit File Access under any circumstance. Then make sure the new virtual file cache setting matches the level of disk caching you need. This parameter replaces SmartDrive, so use the same rules you would with that real-mode disk cache. On a system with 16MB of memory, you'll probably get the best performance with the cache size set to 1,024 bytes.

SET MAXBPS=768

#171 If you run Windows for Workgroups 3.11, you should add the line MaxBPs=768 to the [386Enh] section of SYSTEM.INI. You'll have fewer system crashes than before, largely because Windows refuses to run some applications in situations where it knows you don't have enough memory or resources.

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TERMINAL SITUATION

#172 Terminal doesn't provide a phone book, but you can emulate one. In Terminal, select Settings and set up the parameters for the service you want to call (phone number, kind of terminal emulation, transfer protocol, and so on). Once you've set it up, select File, Save As to save the settings in a TRM file. Give it a descriptive name. Do this for any other services you regularly call. Use File, Open to call up a list of all your settings files and load the one you want.

LONG FILENAMES IN WINDOWS

#173 For long Windows filenames, run Program Manager, select File, New, and select Group. Name the new group Documents. While the Documents group window is open, select File, New, Program Item. After Description, type up to 40 characters. After the Command Line prompt, type the filename—for example, LNCHLIT.DOC—and after Working Directory, enter the directory where that file is stored. When you double-click on this icon, it will launch Word and bring up the document.

DOS COMMUNICATIONS

#174 You love your DOS communications program but it runs slowly (or worse, not at all) from within Windows. Here's why: Windows supports multitasking, but most DOS communications programs don't. If you run a Windows application and your DOS communications program at the same time, the Windows application can keep the communications program from getting the CPU time it needs. To overcome this, edit the communications program's Program Information File (PIF) as follows: In the Main group, Double-click on PIF Editor, select File, Open, and double-click on the appropriate PIF (for example, PROCOMM.PIF). Check the Full Screen and Background Execution boxes, click on the Advanced button, and check the Lock Memory box, which disables application memory swapping. Save and exit. For this tip to work, Windows must be in 386 Enhanced Mode and you must have a permanent swap file and enable 32-bit disk access.

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*NSTL Software Digest Ratings Report, Advanced Word Processors for Windows, 2/94. **$299 promotional price available while supplies last. †In Canada, call 1-800-GO-LOTUS. ©1994 Lotus is a trademark of Lotus Development Corporation

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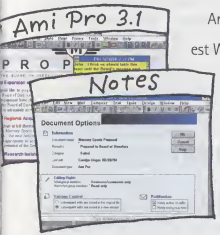

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Quick Tips

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BUFFER RUNNETH OVER

#175 If you have a sound or video capture card that uses DMA with a non-Windows application, you should increase your DMA buffer's size so you don't fill the buffer and crash your system. Edit SYSTEM.INI, go to the [386Enh] section, find the line DMABufferSize=, and change the value after the = to at least 64. If this line isn't there, add it. Then restart Windows.

RECORDER MACROS FROM ICONS

#176 After you have created a macro with Windows' Recorder, launch it quickly from the Program Manager. In Program Manager, select File, New Item. In the Command line field, type: RECORDER -H *shortcutkey filename* where *shortcutkey* is the key combination you assigned to the macro when you recorded it, and *filename* is the name of the file into which you saved the macro. Make sure Recorder isn't running when you make this assignment or this won't work properly.

FONT SUBSTITUTES

#177 If you use aspartame and non-dairy creamer in your coffee, you'll appreciate some of the font substitutions that Windows can make automatically—particularly if you receive files that include fonts you don't have on your system. Edit WIN.INI and go to the [Font Substitutes] section. In it, add a line such as Courier = Arial to make every occurrence of Courier in the sent file appear as Arial on your machine.

SPEEDY LAUNCHES

#178 If you have particular applications you run all the time, launch them with hotkeys. In Program Manager, select the icon of the application you want to launch and hit Alt-Enter. In the Shortcut Key field, type the letter, number, or function key you want to use. Close the dialog box and the key combination you specified will now launch your application.

SHARE AND SHARE ALIKE

#179 Windows users have long lamented the DOS program called SHARE. It's been accused—wrongly—of contributing to the general instability of Windows, adding overhead where none is necessary, and generally acting like an ogre perched at Windows' door. Unfortunately, many Windows programs require SHARE. If you look in your AUTOEXEC.BAT file, chances are good that it has a line more or less like this:

C:\DOS\SHARE.EXE

Windows for Workgroups has a new, much improved version of SHARE called VSHARE.386. Instead of clunking around with the other DOS effluvium loaded before Windows runs, VSHARE provides SHARE-style services within Windows itself. If you have Word 6.0 for Windows and would like to run VSHARE instead of SHARE, call Microsoft at (800) 426-9400 and ask for the free Word 6.0a for Windows upgrade. When you install the upgrade, VSHARE will also be installed on your system (it will be copied to your WINDOWS\SYSTEM subdirectory, and the appropriate line will be added to SYSTEM.INI). If you use VSHARE only under Windows, you may then remove any reference to SHARE from AUTOEXEC.BAT.

SERVER LIST

#180 Windows for Workgroups knows about all the active servers around it because it keeps a list. That's fine, except that by default your system may hold the master list of servers for your workgroup, which can slow you down. Edit SYSTEM.INI and go to the [Network] section. Find the line MaintainServerList=. If the value is AUTO, your machine may or may not be holding the master list of servers. If you set it to YES, you are definitely holding a list, even if it's only for your own reference—that speeds your system up when you're searching for a server. If you set it to NO, you'll save some memory, but it may take a while to find servers.

CUSTOMIZE FILE MANAGER

#181 Don't forget that you can customize the File Manager toolbar—add the Sendmail button, for instance. Select Options, Customize Toolbar to make your changes. And with DOS 6, the DOS utilities show up on the toolbar.

SHARE A CD-ROM DRIVE

#182 Windows for Workgroups 3.11 lets you share CD-ROM drives, but you also need Version 2.2 of MSCDEX. After you install your CD-ROM drive and its software, edit AUTOEXEC.BAT. Find the line that loads MSCDEX and add the /S switch to it to enable sharing, then share the CD-ROM drive like any other disk from File Manager.

NOTEPAD FIX

#183 You want Notepad to display all of the available files in the File Open option instead of just TXT files. In File Manager, copy NOTEPAD.EXE to NOTEPAD.BAK. Launch Write, open NOTEPAD.EXE, and click on No Conversion. Select Find, type TXT and press Enter. Write highlights the first occurrence of TXT. Click twice on Find Next to skip to the third occurrence and click on Cancel to stop the search. TXT should be highlighted. Type an asterisk followed by two spaces. Save and exit. Next time you launch Notepad, it will display all the files in a directory when you select File, Open.

Time Saver: ICON COPIES AND LEFTY MENUS

#184 If you want to **copy an icon** from one Windows 3.1 Program Manager group to another, hold down Ctrl as you drag the icon to its new home. **#185** By default, Windows menus display with their left edges aligned to the left side of the name of the menus. That's great for righties, but if you're a lefty, it's inconvenient, so **make the menus align to the right** by adding the line MenuDropAlignment=1 to the [Windows] section of your WIN.INI file.

To-Do List

#186 By default, Windows 3.1 creates a **temporary swap file.** It works, but it's slow. Make it faster by making it permanent. Run the 386 Enhanced section of the Control Panel. Select Virtual Memory, then Change. Under New Swapfile Settings, select Permanent and say OK to the default size.

#187 Before you create a permanent swap file in Windows 3.1, make sure your hard disk is not heavily fragmented. **Run MS-DOS 6's DEFRAG** utility or any other disk defragmenter. Make sure you do it before creating the swap file: Most defragmenters have trouble defragmenting an existing Windows swap file.

FORCE CLIENT OR SERVER STATUS

#188 One problem with Windows for Workgroups is that users can control whether their systems are clients or servers. Add the line: NoSharingControl=0 to the [Network] section of SYSTEM.INI. This line modifies the Network Control Panel, removing the check box that lets you turn the server portion of Windows for Workgroups on and off. The settings remain unchanged until you remove the NoSharingControl line from SYSTEM.INI.

FIXING SETUP PROBLEMS

#189 If you mess up a setup—for example with a new video driver—and Windows won't load, change the directory to \WINDOWS (or wherever Windows is installed) and run SETUP. You can set most parameters from here and get Windows running enough to fix things.

SMALL WIN.INI

#190 When you load Windows, it loads the entire WIN.INI file into memory. That means memory is being hogged by all the fonts you load but don't use and all the old software you've deleted that added lines to WIN.INI. Delete these and free memory. Remember to back up the file before editing it.

SPEED DOS UNDER WINDOWS

#191 Open SYSTEM.INI and add the line FileSysChange=Off to the [386Enh] section. From now on, when a non-Windows application does something to a file (create, rename, or delete, for example), Windows won't waste time updating File Manager.

DON'T RESTART WINDOWS

#192 After you edit WIN.INI, rather than restart Windows to make the changes take effect, double-click on the Enhanced icon in the Control Panel, then click on OK. You won't need to restart for your changes to take effect. This works for all icons except Fonts, Ports, Printers, and Drivers.

FILE MANAGER SELECTIONS

#193 To select one file in File Manager, you click on it. Simple. To select more than one file, hold down the Ctrl key as you click on the files you want to select. If you want to select a bunch of files that are right next to each other, hold the Shift key, click on the top file, then the bottom file: You'll select the entire range.

MISSING A DOUBLE-CLICK

#194 If you move the mouse more than a tiny distance between the first and second clicks of a double-click, nothing will happen. If you're not steady of hand, this is a problem. Edit WIN.INI, and go to the [Windows] section. Find the lines DoubleClickHeight= and DoubleClickWidth= and change the numbers after the = signs to 10. If the line isn't there, add it. This is the number of pixels your mouse can move before the second click becomes ineffective.

LOAD APPS MINIMIZED

#195 For speedy application launch, hold down the Shift key and double-click on an icon to launch its application in minimized mode. Once you've opened several applications, use the Cool Switch (Alt-Tab) to scroll through them.

CARDFILE MOVIES

#196 The Cardfile works as a client for Audio/Visual Interleave (AVI) movie files, but once you've placed the movie on a card, you have to remember to choose Edit Picture in order to click and play back the movie.

WINDOWS NT MOUSING AROUND

#197 Tired of the pointer? Change it to an animated horse. Go to the Control Panel, double-click on the Cursors icon, and click on Arrow. Then click on Browse and select HORSE.ANI. Now you'll have a galloping horse as your default mouse cursor.

SECURITY: DISABLE FLOPPY

#198 If you have workstations used by temporary employees and you want to make sure they don't take data home, disable their floppy drives. Log on as Administrator and double-click on the Devices icon in the Control Panel. When the dialog box opens, scroll through the list until you find Floppy, and select it. Then click on the Startup . . . button to modify the startup options. Click on Disabled, then on OK. Click on Yes in the resulting warning dialog box, then restart

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CLIPBOARD IN DOS SESSIONS

#199 You use DOS applications under Windows and want to use the Clipboard to cut/copy/paste to or from Windows applications. Easy as pie. Run the DOS application in a window—not full-screen, using Windows' MS-DOS prompt, for example, or by hitting Alt-Enter during your DOS session. You can also use the Windows PIF Editor to change the DOS application's information, designating the display as windowed. While that program is running in a window, click on the Control Bar and select Edit, Mark. Using the mouse, block the text you wish to copy to the Clipboard, then select Edit, Copy. Alternatively, you can select Edit, Paste to paste text from a Windows application.

WINDOWED DOS APPS

#200 Running a windowed DOS application can be frustrating because you can't maximize the window. The maximum setting for a DOS window is 80 columns by 50 rows, but there's a way around this. Press Alt-Enter to switch to full, non-windowed mode, and toggle back to a window with another Alt-Enter.

REGISTRY EDITOR

#201 In Program Manager, use File, Run and type REGEDIT. You'll see Windows' Registration Database—it's equivalent to the DOS path, only better.

NAVIGATING FILE MANAGER

#202 Looking for a file in a 300-file directory can take too much clicking and scrolling. The easiest way to go quickly to a specific file is to sort the directory by name (select View, Sort by name), click anywhere in the file window (on the right), then type the first letter or character of the filename you wish to reach. This will take you to the first file that starts with that character. Type the same character again, and you'll go to the next file that starts with that character.

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WHERE'S BOOTLOG?

#203 If WIN/B doesn't create a bootlog, it usually means that it didn't get past loading virtual device drivers (VxDs). You may need to examine the [386Enh] section of your SYSTEM.INI file for the offending VxDs (start with third-party ones). You'll need to disable them one by one by placing a semicolon before the line that loads each, and reload Windows until you isolate the culprit.

ELEMENTARY, MY DEAR . . .

#204 Add DRWATSON to your LOAD= line in the WIN.INI file, so that the Dr. Watson utility will constantly lurk in your system, waiting for crashes. Once it finds a crash (lucky you), it'll prompt you to enter a description of what you were doing at the time and will create a text file (DRWATSON.LOG) with all of the relevant system information so that you can share it with a technical support person.

Time Saver: ICON FONTS

#205 If squinting at tiny fonts on the Windows Desktop gives you a headache, try this: Launch Notepad, Open WIN.INI, and add the following lines under the [Desktop] heading:

```
IconTitleFaceName
=Arial
IconTitleSize=11
IconSpacing=86
```

Change the font name and size to your liking (ours might be a little too big for you). Note that the larger the font size, the higher the icon spacing should be, or your icon titles will overlap.

the system. Make sure you have a complete backup first, because if you disable the floppy drive and something goes wrong, you risk losing all of the data on that workstation.

CUSTOM PROGRAM MANAGER TITLE

#206 Normally, Program Manager's title bar says "Program Manager - MachineName\UserName." If you want it to say something more interesting, add Program Manager to your Startup program group by opening the Startup group and selecting File, New, Program Item. Click on OK. Under Command Line, type \WINNT\SYSTEM32\PROGMAN.EXE or the correct path to PROGMAN.EXE (if you don't know what it is, use the Browse button). In the Description field, type the text you want to appear in the title bar and click on OK. Next time you log in, Program Manager's title bar will have your text in it.

WINDOWS UTILITIES

HEWLETT-PACKARD DASHBOARD 2.0 ASSIGN SHORTCUT KEYS

#207 In the Quick Launch menu, assign shortcut keys to launch programs by typing a character in the Shortcut Key box. Dashboard will automatically add Ctrl-Alt to that character. If you type F, the hotkey will be Ctrl-Alt-F. If you choose function keys, they'll be literal, which means if you want to use Ctrl-Alt-F9, you have to press that combination in the Shortcut Key box.

BRING UP DASHBOARD

#208 To quickly bring Dashboard up from anywhere, select a hotkey that doesn't conflict with any of your applications. The safest one seems to be the default left- and right-mouse button combination. To designate that hotkey, select the Customize icon (the wrench), click on the Hotkeys tab, and simultaneously click on the left and right buttons while in the Mouse Shortcut box.

NORTON DESKTOP 2.0 FOR WINDOWS CUSTOMIZE YOUR DRIVE WINDOWS

#209 Norton Desktop for Windows always places drive windows in a specific location with a specific size. To set your own default location and size, use the Norton Desktop Control Center. Select the Options menu from the main desktop, choose Customize, click on the Drive Windows button on the Map screen, then click on the Advanced button. Use your mouse or keyboard to resize the sample drive window and move it to your preferred location.

HOME AND OFFICE APPOINTMENTS

#210 Day Planner lets you keep different appointment books, to-do lists, and phone books. By default it uses a file called DEFAULT.A for the appointment book, DEFAULT.T for the to-do list, and DEFAULT.P for the phone book. If you want to create a separate to-do list for your home tasks, select File, New and type in a description of your to-do list in the Name field (for example, "My Home To-Do List"). This makes it easier to organize your work and keep things from getting confusing.

NORTON DISK DOCTOR FOR WINDOWS

#211 Norton Disk Doctor for Windows brings all the power of Disk Doctor to the Windows environment. In addition to having a new interface, Disk Doctor for Windows can run in the background while you perform other tasks. When run this way, Disk Doctor can diagnose and repair problems as soon as they occur. You can configure Disk Doctor to load with Windows by opening the Norton Utilities'

Speed Boost: REMOVE EXPANDED MEMORY

#212 If you don't use any TSRs or applications under Windows that require expanded memory (EMS), you can **disable Windows' EMS driver** to improve performance. Edit SYSTEM.INI, go to the [386Enh] section, and add the line NoEMMDriver=On. Restart Windows and you should see a performance improvement. If you're not sure whether your applications use EMS, don't alter this setting.

To-Do List

#213 Windows 3.1 includes a **configuration editor** that automatically opens all of your system's important configuration files. Select File Run from the Program Manager menu, and type in SYSEDIT. Press Return and AUTOEXEC.BAT, CONFIG.SYS, WIN.INI, and SYSTEM.INI will all open, ready for your editing pleasure.

#214 If you don't want Windows to load the **programs in your StartUp group,** type WIN, press Enter, and hold down the Shift key.

Windows Group, launching Disk Doctor for Windows, selecting Options, Preferences, Startup Options, and checking Load with Windows, and clicking on OK. When you restart Windows, Disk Doctor will automatically run in the background.

CUSTOMIZE VIRUS ME

#215 Mak

(for example, "Your system may be infected! Call Jane at Extension 456") in the Virus Alert Custom Message box, and click on OK. Choose Options, Clinic and set all of the "A" w options, except Network Drives.

O INI ADVISOR

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#235	Tile open windows	SHIFT-F4
#236	Close current window	CTRL-F4
The Menu Bar		
#237	Activate menu bar	ALT OR F10
#238	Select a pull-down menu	ALT-*MENU LETTER*

Quick Tips

WINDOWS 3.1

ALT MENUS

#239 Do you hate using the mouse to navigate through menus? Use the Alt key to activate Windows application menus, then use the arrow keys to navigate menu options.

DELETE FILES: SAVE DISK

#240 Run Windows' Setup program to delete unnecessary files. Launch SETUP, select Custom, and deselect programs and help files you don't use—you can save up to 5MB.

KEEP TRACK OF YOUR CRASHES

#241 To keep a log of your Enhanced mode Windows startup, load Windows with the WIN/B command, which creates a text file BOOTLOG.TXT.

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#242 If you use Windows for Workgroups with LAN Manager, don't use spaces in your Windows for Workgroups node names: It can handle them, but LAN Manager can't.

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#243 If your system feels slow and it's acting as a server, open the Control Panel in the Main group, and double-click on the Network icon. You'll see a slider that controls foreground (client) operation. Move the slider to get more foreground performance.

WINDOWS NT 3.1 SET UP YOUR GUEST

#244 By default, the Windows NT Guest account has no password. That's fine, except when you try to print to an NT server from a Windows for Workgroups client—the account needs that password. Use the User Manager to create one.

EVENT LOG MAINTENANCE

#245 When the Windows NT event log fills, Windows NT terminates all tasks and threads. To get around this, go into the Event Log Settings dialog box and choose Overwrite Events as Needed.

DON'T DELETE THAT USER

#246 Windows NT tracks users via an internal number, not by name. If you delete an account, even if you recreate an account with the same name, it won't have the same internal ID. The configuration information saved for that account will also disappear.

Quick Tips

WINDOWS 3.1

WHERE'S BOOTLOG?

#203 If WIN/B doesn't create a bootlog, it usually means that it didn't get past loading virtual device drivers (VxDs). You may need to examine the [386Enh] section of your SYSTEM.INI file for the offending VxDs (start with third-party ones). You'll need to disable them one by one by placing a semicolon before the line that loads each, and reload Windows until you isolate the culprit.

ELEMENTARY, MY DEAR . . .

#204 Add DRWATSON to your LOAD= line in the WIN.INI file, so that the Dr. Watson utility will constantly lurk in your system, waiting for crashes. Once it finds a crash (lucky you), it'll prompt you to enter a description of what you were doing at the time and will create a text file (DRWATSON.LOG) with all of the relevant system information so that you can share it with a technical support person.

Time Saver: ICON FONTS

#205 If squinting at tiny fonts on the Windows Desktop gives you a headache, try this: Launch Notepad, Open WIN.INI, and add the following lines under the [Desktop] heading:

```
IconTitleFaceName
=Arial
IconTitleSize=11
IconSpacing=86
```

Change the font name and size to your liking (ours might be a little too big for you). Note that the larger the font size, the higher the icon spacing should be, or your icon titles will overlap.

the system. Make sure you have a complete backup first, because if you disable the floppy drive and something goes wrong, you risk losing all of the data on that workstation.

CUSTOM PROGRAM MANAGER TITLE

#206 Normally, Program Manager's title bar says "Program Manager MachineName\UserName." If to say something more interes Program Manager to your Sta group by opening the Startu selecting File, New, Progra on OK. Under Command \WINNT\SYSTEM32\PROGM correct path to PROGMAN know what it is, use the F the Description field, ty want to appear in the ti OK. Next time you lo Manager's title bar wi

WINDOWS U

HEWLETT-PACKA ASSIGN SHORTC

#207 In the Quic shortcut keys to a character in t Dashboard wi to that charac will be Ctrl-/ keys, they'll want to use that combi

BRING U

#208 To anywhe conflic The s left-a To d

Customize icon (the wrench), click on the Hotkeys tab, and simultaneously click on the left and right buttons while in the Mouse Shortcut box.

NORTON DESKTOP 2.0 FOR WINDOWS CUSTOMIZE YOUR DRIVE WINDOWS

#209 Norton Desktop for Windows always places drive windows in a specific location specific size. To set your own default use the Norton Desktop tions menu

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Windows Group, launching Disk Doctor for Windows, selecting Options, Preferences, Startup Options, and checking Load with Windows, and clicking on OK. When you restart Windows, Disk Doctor will automatically run in the background.

CUSTOMIZE VIRUS MESSAGES

#215 Make your PC beep and flash a warning message to alert you of a virus by choosing Options, Intercept and selecting Enable Beep Alert and Enable Popup Alert. Under Commands, select Allow Proceed and Allow Reinoculate. Next, choose Options, Global and select Detect Unknown Viruses and Auto Inoculate. Enter a custom message (for example, "Your system may be infected! Call Jane at Extension 456") in the Virus Alert Custom Message box, and click on OK. Choose Options, Clinic and set all of the Allow options, except Network Drives.

REFER TO INI ADVISOR

#216 Have you ever been baffled by the settings in WIN.INI and SYSTEM.INI? Windows users can learn a lot by looking through this virtual encyclopedia of INI settings and statements. INI Advisor contains information on hundreds of these settings with hot links to Tips and Troubleshooting techniques. In addition, you can experiment with settings by clicking on the Set or Edit

Time Saver: PROGRAM MANAGER

REPETITIVE TASK		SHORTCUT
#217	Exit Windows	**ALT-F4**
#218	Maximize a window	**ALT-SPACE, X**
#219	Minimize a window	**ALT-SPACE, N**
#220	Move a window	**ALT-SPACE, M**
#221	Maximize a secondary (internal) window	**ALT-HYPHEN, X**
#222	Minimize a secondary window	**ALT-HYPHEN, N**
Moving around Applications		
#223	Go to next application	**ALT-ESC**
#224	Go to previous application	**ALT-SHIFT-ESC**
#225	Toggle through running applications	**ALT-TAB**
#226	List running application	**CTRL-ESC**
Moving around Items and Groups		
#227	Select next program group	**CTRL-F6 OR ALT-W**
#228	Move around program items	**ARROW KEYS**
#229	Open selected program item or group	**ENTER**
#230	Call up program item properties	**ALT-ENTER**
#231	Move program item to a different group	**F7**
#232	Copy program item to a different group	**F8**
#233	Delete program item or group	**DELETE**
Dealing with Windows		
#234	Cascade open windows	**SHIFT-F5**
#235	Tile open windows	**SHIFT-F4**
#236	Close current window	**CTRL-F4**
The Menu Bar		
#237	Activate menu bar	**ALT OR F10**
#238	Select a pull-down menu	**ALT-*MENU LETTER***

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Quick Tips

WINDOWS UTILITIES

HP DASHBOARD 2.0 MOUSELESS OPERATIONS

#247 If your mouse is acting up, you can still navigate Dashboard with the keyboard. Use Tab to move between sections, and Enter to select. Alt-L brings up the Layout menu, and Alt-T invokes the Task menu.

LIKE DOSKEY, ONLY BETTER

#248 Dashboard has a DOSKEY-like feature in its Run menu. Any command in the prompt window can be repeated, even days later. Just click in that window, hit the up arrow, and the last command will be displayed. Continue using the up arrow to view older commands.

WHAT'S THE HAPPY FACE ICON?

#249 If you've configured the Quick Launch icons as unlabeled, it's easy to forget what each stands for. To quickly remind yourself, right-click on an icon and you'll pull up the name of the application it runs.

QUICK CUSTOMIZE

#250 To quickly call the Customize menu for a specific object or item on Dashboard, double-click the right-mouse button on that item.

NORTON DESKTOP 2.0 SMARTCAN

#251 Norton Unerase is a highly effective recovery tool, unless the deleted file was fragmented or data has been written to the disk since the file was erased. SmartCan saves deleted files for a specified number of days, protecting the information from being overwritten. If you use SmartCan, Unerase can restore recently deleted files in perfect condition. To load SmartCan automatically whenever you start your computer, run NUCONFIG, choose StartUp Programs, and select Start SmartCan. After restarting, log into your network (if available), type SmartCan at the prompt, and press Enter. Select Drives, All Local Drives, All Network Drives.

INITRACKO

#252 To automatically run INITRACKO at startup, run the NUCONFIG utility, choose Startup Programs, and select Snapshot Sys Files.

buttons from INI Advisor's explanations. These buttons automatically launch INI TUNER or INI EDIT, bringing you directly to the file or control panel that manipulates the setting. (It's a good idea to run INI Tracker before experimenting.)

PC TOOLS 2.0 FOR WINDOWS SAVE YOUR FAVORITE CONFIGURATION

#253 Save your PC Tools configuration once and for all. After arranging the desktop to your liking, exit PC Tools for Windows and copy the following files from the CPS\DATA directory to a safe place: *.OFC, *.HEP, and *.EMS. (It won't work while PC Tools is active—you'll get a sharing violation.) To restore your configuration, simply copy the files from the safe directory back to CPS\DATA.

OS/2

WORKPLACE SHELL

#254 It's a snap to customize certain folders' pop-up menus if you follow these steps: With the right-mouse button, click on the folder to modify. A menu will pop up. Select Open, Settings and click on the Menu tab. Under Available menus, click on Create another . . . and type in a name for the menu. Click on OK. Single-click on the menu name to select it. Click on Create another . . . under Actions on the menu. Type in the name for the menu option and the full path of the program to run. Repeat the last step for as many items as you wish to add to the menu. When you finish adding items, double-click on the settings notebook icon in the upper-left corner to close it.

When you click on the right-folder icon, your new menu shows up as the next-to-last item, just above Close. Click on that name and all of your menu items show up.

REXX

#255 To make OS/2 batch files take a yes/no answer from the user, write a REXX program and call it from the batch file. In the Enhanced Editor, type the following and save it as YESORNO.CMD:

```
/* Name: YESORNO.CMD */
CALL RxFuncAdd 'SysGetKey', 'RexxUtil',
  'SysGetKey'
TOP:
ASCII = 999
SAY "Enter a Single Character Y)es or N)o"
Character = SysGetKey(echo)
IF Character = "Y" then ASCII = 0
IF Character = "y" then ASCII = 0
IF Character = "N" then ASCII = 1
IF Character = "n" then ASCII = 1
SAY
IF ASCII = 999 then SAY "ERROR: Enter
  Y)es or N)o"
IF ASCII = 999 THEN SIGNAL TOP
Exit ASCII
```

OS/2 treats REXX programs as batch files, so you can call this program from your batch file with a CALL YESORNO command.

PRINT MANAGER

#256 To speed up printing, follow your software's instructions to print to a file, rather than directly to the printer. Once you've created a print file, press Ctrl-Esc to switch to the Workplace Shell and open the folder where the print file is stored. With the left-mouse button, drag the file's icon to the Print Manager icon and release. Switch back to your application and OS/2 will handle the print job in the background.

MULTIPLE APPS, ONE ICON

#257 Have you ever wanted to launch multiple Windows applications from a single OS/2 program object? Here's an example that creates a program object using Program Manager to open the Win-OS/2 Control Panel and Print Manager. Open the Templates folder and locate the Program

Time Saver: ALT-F, X OUT OF CONTROL PANEL

#258 Windows' Control Panel is a **nonconformist application:** Rather than typing Alt-F, X to exit, you type Alt-S, X. Here's how to fix that. Copy CONTROL.EXE in your WINDOWS directory to CONTROL.BAK. In Windows' Write, open CONTROL.EXE and click on No Conversion. Select Find, Replace and type &Settings in the Find What text box. In the Replace With box, type &Filemenu. Click on Replace All, save the file, and exit.

template. Use the right-mouse button to drag a new program object from the Program template and drop it onto an empty region of the OS/2 Desktop. When you release the right-mouse button, OS/2 displays the Program page of the Settings notebook. In the Path and File Name entry field, type \OS2\MDOS\WINOS2\PROGMAN.EXE. In the Parameters entry field, type PRINTMAN.EXE, CONTROL.EXE. In the Working Directory, type \OS2\MDOS\WINOS2.

Now click on the General tab and, in the Title field, type Windows Control. Double-click on your new icon to run these two applications. You can substitute other program names in the Parameters field to run them the same way.

ADD OBJECTS TO MENUS #1

#259 To add an application you run frequently to the bottom of the Primary pop-up menu, open the settings for the menu object and click on Menu. Now drag any program object to the lower box and the program will be added automatically.

ADD OBJECTS TO MENUS #2

#260 Here's an alternative way to add frequently run applications to the bottom of the Primary Pop-Up menu. For example, if you want to add the OS/2 Icon Editor, open the OS/2 System and Productivity folders. Then open the Desktop's Settings notebook by right-clicking on an empty region of the Desktop. Choose Settings from the Open submenu. Turn to the Menu page of the resulting notebook, and select the Primary Pop-Up Menu item from the Available Menus list box. Next comes the trick: Click on the title bar of the Settings notebook and drag it down and to the left until you can see the Productivity folder. Click on the title bar of the Productivity folder, and use the right-mouse button to drag the Icon Editor icon to the Actions On Menu list box. Release the button and the name Icon Editor appears. Close everything and right-click on the Desktop: Icon Editor will appear at the bottom of the Pop-Up menu.

Time Saver: FILE MANAGER

	REPETITIVE TASK	SHORTCUT
#261	Exit	**ALT-F4**
Disks, Directories, and Files		
#262	Show drive list	**F2**
#263	Move a file	**F7**
#264	Copy a file	**F8**
#265	Rename a file	**ALT-F, N**
#266	Open file or directory	**ENTER**
#267	Delete file or directory	**DELETE**
#268	Undelete a file (DOS 6.x only)	**ALT-F, U**
#269	Show current file's properties (attributes, size, date, etc.)	**ALT-ENTER**
#270	Sort files by name	**ALT-V, S**
#271	Display date, size and file attributes	**ALT-V, A**
#272	Go to a specific file	***FIRST LETTER OF NAME***
#273	Go to a specific directory	***FIRST LETTER OF NAME***
Dealing with Windows		
#274	Cascade windows	**SHIFT-F5**
#275	Tile windows vertically	**SHIFT-F4**
#276	Move among File, Disk, and Directory windows	**TAB OR F6**
The Tree		
#277	Expand tree one level	**+**
#278	Expand branch	*****
#279	Collapse branch	**-**
#280	Expand everything	**CTRL-***
Miscellaneous		
#281	Refresh view	**F5**

Quick Tips

WINDOWS UTILITIES

NORTON DESKTOP 2.0 USE THE RIGHT-MOUSE BUTTON

#282 When you click your right-mouse button on an item, you'll get a pop-up menu with options specific to that item. Click anywhere on the desktop to get the desktop pop-up menu, which gives you a quick, easy way to access any function, even if you decide to turn your menu bars off.

DISABLE ANNOYING DIALOG BOX

#283 If you don't want to see the message "Exit Norton Desktop?" each time you exit Windows, select Options from the main desktop menu, select Customize, and click on the Confirmation button on the Map screen. Check off the "Exit Norton Desktop" box and click on OK.

INI TRACKER

#284 INI Tracker is the Windows version of INITRACKD. INI Tracker updates and utilizes the same database as INITRACKD. There are countless programs that alter the SYSTEM.INI and WIN.INI files during installation and configuration. INI Tracker gives you control over these changes. INI Tracker lists snapshots and indicates alterations to tracked files and directories (which you can customize). You can view the changes using FILE COMPARE from INI Tracker. If you want to, you can roll back to earlier versions of the tracked files.

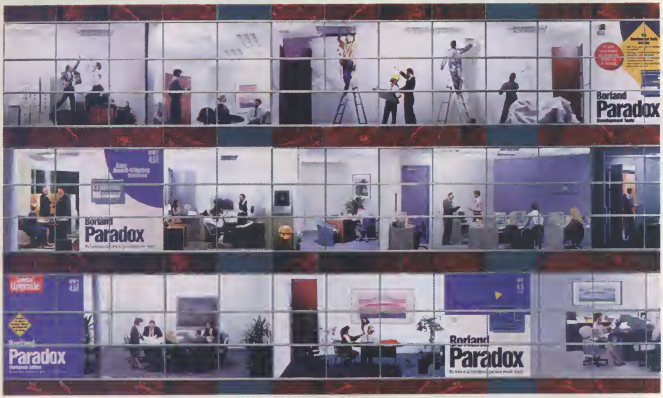
SYSTEM WATCH

#285 System Watch is a Windows utility that monitors many aspects of your system. It reports on CPU utilization, memory, disk space, cache performance, and much more. You can load System Watch with Windows and customize its layout, for example, creating a gauge across the bottom of the screen, always in the foreground. Try the following: Launch System Watch, choose Sensor, and select four areas to monitor. Then choose File, Options, display four columns, check Always On Top and No Title. You also set the font and colors. Select OK and widen the column to span the screen.

WINZIP 5 DRAG 'N' ZIP

#286 You don't need to use the nonintuitive File, New Archive process. To zip a file (or files), drag it from File Manager to the minimized WinZip icon.

THE #1 WINDOWS DATABASE



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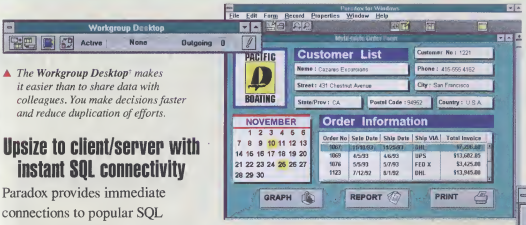

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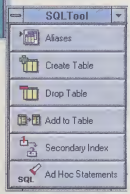

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We Got the Write Stuff

Quick Tips

WORDPERFECT 5.1 POP-UP CALCULATOR

#287 WordPerfect comes with a pop-up calculator macro (CALC.WPM). Look for it in your \WP51 directory. If it's not there, press Shift-F1, L and look for the Macro directory. You may rename the file as ALTC.WPM, so that you can invoke it by pressing Alt-C.

DELETE A GROUP OF FILES

#288 When you're in List Files, you may wish to delete a group of files in one operation. To get rid of all of the memos your former boss has written, press T, E, type the boss's name and press Enter. Only files containing that string will be displayed in the directory. You can mark them all for deletion by pressing Alt-F5 (note the asterisk markers next to the filenames), then press Del to remove them.

LOST YOUR CHEAT SHEET?

#289 For a quick glance at your function-key assignment, press F3 twice. To clear the screen, press Enter.

EVEN TABLE COLUMNS

#290 To resize table columns to a uniform width, move the cursor to the first column, select Alt-F7 (Columns/Table), turn on Block (Alt-F4) and move the cursor to the last column in the range you want to adjust. Press 2 (Format), 2 (Column), and 1 (Width). The average column width is displayed. Press Enter to accept it or type in a different size.

HELP CONSCIOUS

#291 When you're in Help (activated by pressing F3), you can get the context-sensitive Help screen by pressing any key. Press Alt-5, for example, and you'll get the Mark Text screen. Press Enter to exit Help.

WORD PROCESSING

Speed Boost: RETURN TO LIST FILES . . . TODAY

#292 If you use Long Document Names in WordPerfect 5.1, or have many files in a directory, pressing F5 can be a painfully lengthy procedure. The good news is, every time you're in List Files, **WordPerfect takes a snapshot of your directory.** To return to the last "snapshot," press F5 twice. This takes less than a second, even on slow machines.

WORDPERFECT 5.1 TIME MACRO

#293 You're typing along, and all of a sudden you realize you've missed the last train home. This could have been avoided with a quick time macro, invoked by pressing Alt-T. To create the macro, press Ctrl-F10, and press Alt-T for its name (if you have an existing Alt-T macro, use a different letter). For description, type Time and carefully press the following keys (they'll be recorded as you press them):

Alt-12 Shift-F5 F 8.90 Enter Enter Home↵
↳Home Down Enter Enter The time is ↵
↳Shift-F51 (Press Enter to clear)↵
↳Ctrl-PageUp P Enter Home Home Left↵
↳Ctrl-End Backspace Backspace Shift-F2↵
↳Alt-12 F2 Backspace Shift-F5 F 3 1,↵
↳4 Enter Enter

Note: The Alt-12 key combination produces the "female" symbol as a place marker in your document. Hold Alt down and press 1 on the numeric keypad, then press 2 while still holding Alt.

Press Ctrl-F10 to save the macro. To run the macro, press Alt-T. Press Enter to clear the displayed time.

BATCH FILES

#294 You can write batch files in the DOS editor EDIT, but for best results, do it in WordPerfect. To save an ASCII file, press Ctrl-F5, T, S and name it. The real power is in drawing boxes and borders for better-looking batch files. Use the Line Draw (Ctrl-F3, L) feature in WordPerfect, but be sure to insert Courier 10 as the default font at the top of the document, or your lines will be crooked. To retrieve an ASCII file, press Ctrl-F5, T, R.

QUICK REFORMAT

#295 If you prefer your paragraph headings to be bold and uppercase, create a quick macro to apply those attributes to existing text. To do so, block any text (with F12 or Alt-F4), press Ctrl-F10, press Alt-B for the macro name and type

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Bold, uppercase for the description. To start recording your steps, press F6, then F12, Ctrl-Home, Ctrl-Home, Shift-F3, U. Press Ctrl-F10 to save the macro. To use the macro, always make sure the text you format is preblocked, then press Alt-B.

PORTABLE PERSONAL KEYBOARD

#296 To use the same WordPerfect keyboard configuration on different machines, including the same Alt-letter macros, create a floppy disk containing a predefined keyboard and macros. Change the location of where WordPerfect looks for files for macros by choosing Shift-F1 (Setup), 6 (Location of Files), 2 (Keyboard/Macro Files) and make your floppy the location. You can also temporarily copy the keyboard settings to the hard drive's macro directory—but make sure you delete it before you move on.

ITALIC TO UNDERLINE

#297 Automatically switch all italic text to underlined text with this handy macro:

```
{DISPLAY OFF}↵
{Home}{Search}{Font}24{Font}24{Left}↵
{Backspace}
{Search}{Block}{Search↵
Left}{Font}24{Search}{Underline}
{Left}{Backspace}Y
```

Time Saver: WORDPERFECT 5.1 FOR DOS

	REPETITIVE TASK	SHORTCUT
Selecting Text		
#298	Start Block mode	**F12 OR ALT-F4**
#299	Block to the first occurrence of any character	**TYPE THAT CHARACTER**
#300	Block to the end of the paragraph	**ENTER**
#301	Block one word	**SPACE**
#302	Block to the end of the line	**END**
#303	Block to the end of the document	**HOME, HOME, ↓**
Deletion		
#304	Delete one word	**CTRL-BACKSPACE**
#305	Delete to the end of the line	**CTRL-END**
#306	Delete to the end of the page	**CTRL-PAGE DOWN**
#307	Undelete (restore) the last deletion	**F1, R**
Navigation		
#308	Go to the top of the document	**HOME, HOME, ↑**
#309	Go to the bottom of the document	**HOME, HOME, ↓**
#310	Go to the top of the document, before all codes	**HOME, HOME, HOME, ↑**
#311	Go to the end of the line	**END**
#312	Go to the beginning of the line	**HOME, HOME, ←**
#313	Go to a specified page number	**CTRL-HOME**
#314	Return to position before last major cursor movement	**CTRL-HOME, CTRL-HOME**
#315	Find and go to the next occurrence of specified text	**F2**
#316	One screen down	**+ (ON NUMERIC KEYPAD)**
#317	One screen up	**- (ON NUMERIC KEYPAD)**
Text Attributes on Blocked Text		
#318	Bold	**F6**
#319	Underline	**F8**
#320	Uppercase	**SHIFT-F3, U**
#321	Initial caps	**SHIFT-F3, I**

PHOTO COURTESY OF WORDPERFECT CORP.

CELEBRITIP

QUICKMENUS

#322 Right-mouse–button support is a popular feature in the latest versions of many software applications. In WordPerfect 6.0 for Windows, clicking on the right-mouse button brings up a QuickMenu so you can access features without the main menus. QuickMenus can be accessed anywhere on the interface such as the Button Bar, Power Bar, Ruler Bar, left margin area or document screen. Use them to access virtually any feature including tables, graphics, OLE objects.

AD RIETVELD
PRESIDENT AND CEO
WORDPERFECT CORP.

Quick Tips

WORDPERFECT 6.0 FOR DOS
CREATING NEW DIRECTORIES

#323 Do you want to create a new subdirectory while managing your files? Just press F5 for File Manager and type = to get to the Change Default Directory dialog. Type in the name of the new directory and WordPerfect will prompt you to create it.

TOGGLE VIEWS

#324 Here's a macro for toggling between split- and full-screen views of two documents:

```
SAVESTATE PERSISTALL
AutoCodePlacement(OFF!)↵
WP51CursorMovement↵
(OFF!) VARERRCHK(OFF!)
DISPLAY(OFF!)
IF(EXISTS(ws))
ELSE ASSIGN(ws; "Full")
EndIF
IF(ws="Full") WindowTile
    ASSIGN(ws; "Tile")
ELSE
    WindowMaximize
    ASSIGN(ws; "Full")
EndIF
```

Quick Tips

WORDPERFECT 6.0 FOR WINDOWS FACELIFT

#325 If you don't want to see all of the features in WordPerfect 6.0a for Windows and prefer fewer menu options, use the new WordPerfect Lite template. Choose File, Preferences, click on the File icon, and select Template, WPLite to load the template. It's especially useful for basic editing tasks on laptops. Bonus tip: You can also use WPLite to make WordPerfect 6.0 for Windows look more like WordPerfect 5.2 for Windows, Ami Pro, or Microsoft Word.

MEANINGFUL FILENAMES

#326 Use the Document Summary feature to create long filenames such as "My 1994 Tax Report." Choose File, Document Summary to type in a descriptive name. Display long filenames by selecting File, Open, clicking on Setup in the dialog box and choosing Descriptive Name, Filename for Show. To have WordPerfect automatically prompt you for Document Summary information, choose File, Preferences and double-click on Summary. Check the Create Summary on Save/Exit box and click on Close.

SECOND-ROW TABLE HEADERS

#327 Use this trick to place the header information for a WordPerfect table in the second row, instead of the usual first. Create a table with one row and the desired number of cells. (If you want the first row to contain only a generic title like "Projected Earnings," the table will have only one cell.) Highlight the cells in that row and select Table, Lines/Fill. Under Line Styles, choose Bottom and select None. Add the text and formatting for this row. Next, choose View, Reveal Codes and make sure the insertion point is after the [Tbl Off] code. Create a second table with the desired formatting and column headings. Highlight the first row of this second table and select Table, Format and choose the Header Row option. The header that appears to be the second line of a single table becomes the header of each subsequent page.

WORDPERFECT 6.0 FOR DOS MIGRATING FROM 5.1

#328 If you're a seasoned WordPerfect 5.1 user, you'll be happy to know that most of the familiar keystrokes have been preserved in Version 6.0. Notably different is the Cancel key—which has (finally) been assigned to Esc—and F1 is the Help key, just the way nature intended.

I SAY dBASE AND YOU SAY Dbase

#329 Much as you'd like it to, WordPerfect refuses to accept a strange combination of lowercase initial and the rest of the word in uppercase. Every time you run the Spell Checker, it complains. (Even if you've added the word to your supplementary dictionary—all entries there are saved as lowercase!) The only solution is to use Grammatik, the bundled grammar checker, as a spell checker.

WORDPERFECT 6.0 FOR WINDOWS WHICH KEYBOARD?

#330 If you're familiar with older versions of WordPerfect, set up the WPDOS keyboard to work for you, to minimize the learning curve. Newcomers to WordPerfect should select the WPWin 6.0 keyboard, because it's consistent with other Windows applications. To set a default keyboard, select File, Preferences, double-click on Keyboard, and double-click on the one you want to use.

SEARCH FOR SMART PUNCTUATION

#331 If you use smart quotes in WordPerfect for Windows, you're usually out of luck trying to search for a word such as "Jill's" that contains a smart apostrophe. If you open a Find dialog box and type Jill's, you get a dumb apostrophe. To perform a search using smart punctuation, first type the phrase you're searching for anywhere in a WordPerfect document, then select the phrase and cut or copy it to the clipboard. Launch Find, and paste the phrase into the Find text box.

QUICK E-MAIL

#332 WordPerfect is mail-enabled so you can send e-mail from within the program without leaving your screen. You can attach entire documents or select text before choosing WordPerfect Mail from the File menu, and the text will be inserted automatically into your mail message. WordPerfect supports any VIM- or MAPI-compliant mail package.

SELECTING TEXT

#333 Placing the insertion point in the left margin changes it to a right pointing arrow so you can quickly select full sentences with one click or paragraphs with two clicks. Clicking the right-mouse button in the left margin will bring up a QuickMenu with options to select a sentence, a paragraph, or an entire page.

KEEP BACKUPS

#334 WordPerfect 6.0a for Windows fixes a tendency for two files, STANDARD.WPT and WPSET.BIF, to become corrupted. These two files record any changes you've made to the program's menus, power bars, button bars, keyboard layout, and other look-and-feel components. But even with the files' new stability, it's advisable to make backups of them. And if you're about to change all of the default settings to your preferences, first turn on the macro recorder and record your actions. Later, if you upgrade to a newer version of WordPerfect or reinstall it, you can replay the macro to change the defaults for you.

A TREASURE OF MACROS

#335 WordPerfect 6.0 for Windows comes with a hoard of macros that make working with documents easier, but they aren't

Time Saver: INTERACTIVE STATUS BAR

#336 To get the most out of WordPerfect 6.0's status bar, right-click anywhere on it and choose Preferences from the pop-up menu. **Check the items you want on the Status Bar** Items scroll box. Remove items by dragging them from the status bar, or move them by dragging them to a new position on the bar. You can resize an item by dragging its edge. Any toggle key (such as Insert/Typeover) may be switched by clicking on its bar.

To-Do List

#337 Use WordPerfect 6.0a for Windows' setup program to **uninstall selected features** and save disk space. For instance, once you know WordPerfect's basics, remove the learning files and tutorials, which amount to 2MB of disk space. If you never use the Draw program, save yourself 3MB of your precious disk space by uninstalling it. To access Uninstall, open the WordPerfect for Windows group in Program Manager and double-click on Setup.

documented in the manual. There are, however, two ways to find out which macros do what. One is to read the file README.MCR in the \WPWIN60 directory. It lists the macros and gives a brief description of each. Or, as you scroll through the Play Macro dialog box, glance at the bottom line of the box. It's easy to miss if you don't know it's there, but as the cursor moves over the list of macros, the line changes to describe each macro's function.

If you want to include similar descriptions for your own macros, you have to add them after you've recorded the macros. Choose Macro, Edit, and type that macro name. Then, when you have the macro onscreen, choose File, Document Summary and fill in the Descriptive Filename with the phrase you want to appear in the Play Macro dialog box.

SAVE YOUR CHANGES

#338 When you make major changes to WordPerfect's button bars, power bars, menus, or keyboard layouts, exit WordPerfect and restart it. Many customizations are not saved permanently until you exit WordPerfect. If you have a crash before you close the word processor, you may lose your changes.

QUICKCORRECT

#339 Use the QuickCorrect feature in WordPerfect 6.0a for Windows to expand abbreviations. Add EPA to your list and have it replaced with Environmental Protection Agency. You can also turn text into any of WordPerfect's 1,500-plus characters. Example: Have "tm" replaced with a trademark symbol. Choose Tools, QuickCorrect. Type in the word or letter combination to be replaced, then press Ctrl-W to bring up the WordPerfect character set. Choose a character and click on Insert or Close.

CENTER DECIMAL-ALIGNED NUMBERS

#340 WordPerfect can only decimal-align numbers with the last digit flush against the right of a table's row. Here's the trick to both aligning decimals and centering numbers in their rows. Select the rows of the table and choose Tables, Format and click on the Cell radio button in the Format dialog box. Set Justification to Decimal Align, then click on the Table radio button to set Digits after Decimal to a number greater than the actual numbers displayed. WordPerfect keeps the numbers aligned on their decimal points, but pushes them to the centers of the cells to account for nonexistent decimal places. Experiment with the number of digits until the table looks right.

GIVE YOUR TEMPLATES STYLE

#341 Instead of using templates for forms and risking overwriting them with an accidental save, use Styles to hold a form. Create the form in a normal document or open the template if it's already been created. Choose Edit, Select All to select the entire document and then Edit, Copy to copy it. Next, choose Layout, Styles Create. Type a name for the new form in the Name: text box and a description in the Description: text box. Change Type to

Speed Boost: QUICK PRINT, QUICK FORMAT

#342 Because WordPerfect 6.0 offers **background printing,** you don't need to use the Windows Print Manager as long as you aren't printing from multiple applications at once. Improve your printing by turning off Windows Print Manager in the Printers option of the Control Panel of the Windows Program Manager. **#343** For **quick access to margins and tabs,** use the Ruler Bar. Double-click on the margin marker to access the margin dialog box. Access the Tab Set dialog box by double-clicking on any of the tab markers.

EDITOR'S TIP

ADD TABLE ROWS ON THE FLY

#344 It's not necessary to predetermine the number of rows in a table in WordPerfect 6.0 for Windows. If you need more space when you get to the last cell in the last row, just press Tab, and a new row will be added.

CHRIS SANDLUND
ASSOCIATE EDITOR

Quick Tips

WORDPERFECT 6.0 FOR WINDOWS FIXED MARGIN MOVEMENT

#345 Move both left and right margins, as well as tab settings, simultaneously by holding down Ctrl while you click and drag the left margin marker to a new location. This also works when moving table or column markers with the Ruler.

BACK WHERE YOU LEFT OFF

#346 To return to the last edit in a document, use WordPerfect's QuickMark feature to find your place. Select File, Preferences and choose Environment from the Preferences dialog. Click on Set QuickMark on Save. It will automatically place a QuickMark at the insertion point each time you save—even when you close a document. To find the place, open the document and select Insert, Bookmark, click on the Find QuickMark button, and click on the Goto button. Better yet, create a macro with the line QuickMarkFind() and add it to the Button Bar so that you can quickly go to the QuickMark.

TRUE CLEAN SCREEN

#347 When you want to see as much of your document as possible, turn off all the menus and toolbars. Choose View, Hide Bars. Even though you can't see the menus, they're still available by clicking at the top of the screen or selecting the proper Alt key combination to call up a specific menu. Press Escape to restore all toolbars and menus.

ILLUSTRATION BY STEVEN SANDZ

Quick Tips

WORDPERFECT 6.0 FOR WINDOWS
WHAT'S THAT DIRECTORY?

#348 Can't remember why you used weird directory names like C:\WP\WINFILES\BSNSCRSP? Select File, Open and click on the QuickList button to select Show QuickList. WordPerfect provides long, descriptive names for the directories. To add QuickList descriptions for your directories, click on QuickList again and select Add Item to change BSNSCRSP to Business Correspondence.

INTERACT WITH THE STATUS BAR

#349 The WordPerfect 6.0 status bar does more than just display the status of items of your document—it's an interactive feature as well. To change the font, double-click on the font name in the status bar to get the Font dialog box. Double-click on the position status (Pg 1 Ln 1" Pos 1") to see the GoTo dialog box. Or double-click on the date field to insert the correct date in your document. If you've customized the status bar, many other status items will perform similarly.

WORD 6.0 FOR WINDOWS DON'T AUTOCORRECT!

#350 You've assigned postal abbreviations to state names in AutoCorrect, so that when you type NY, Word replaces it with New York. But when you want to keep the abbreviations, you need to reblock the name or phrase created by AutoCorrect and type the abbreviation over the selection. Don't press the space bar or Enter, or AutoCorrect will be activated in spite of your efforts.

EXTEND A SELECTION

#351 You can make an extended selection in Word 6.0 without having to hold down the left-mouse button. Instead, double-click on the EXT indicator on the status bar. You can single-click on one word at a time and Word will build an ever-extending selection. You can also press F8 once to extend the selection to a word, twice for a sentence, three times for a full paragraph, and four for the entire document.

Document Open, click on the box below Contents, and paste in the form. Click on OK to return to the Style List dialog box, click on the Options button, and choose Save As. Type a filename for the style file in the Save As text box, choose Save, and click on Close back at the Style List dialog box. Your form is still saved as a style for use in other documents, and you can't accidentally replace it.

When you want to use the form, start a new document and select Layout, Styles, Options, Retrieve. Select the form's style file from the Files list box, click on OK, highlight the Style from the Style List dialog box, and click on Apply.

QUICKLIST QUICK ACCESS

#352 The QuickList feature is handy for quickly changing to directories you use a lot. But if you have more than six entries in the QuickList, those toward the end of the alphabet will be below the edge of the list window and you'll have to scroll to get to them. Here's a solution: If the QuickList name for your most frequently used directory is something like "Zipper book chapters," precede the name with an exclamation point. The exclamation point is sorted ahead of alphabet characters so that it will precede even directories that begin with "A." Do the same for any QuickList entries that you use often. Just remember that if you add an exclamation point to more than six QuickList entries, you're back to scrolling again.

DROPCAP.WCM EXPLAINED

#353 Among WordPerfect 6.0 for Windows' scantily documented macros, DROPCAP.WCM is our favorite. Here's how to use it. Place your insertion point immediately before or after the first letter in a paragraph. (Sometimes the macro also

Time Saver: WORDPERFECT 6.0 FOR WINDOWS

	REPETITIVE TASK	SHORTCUT
Modify the Display		
#354	Switch to Draft mode (no headers and footers)	**ALT-V, D**
#355	Switch to Page mode (display headers and footers)	**ALT-V, P**
#356	Display two adjacent pages	**ALT-V, T**
#357	Modify button bar	**RIGHT-CLICK ON IT**
#358	Cascade or Tile open documents	**ALT-W, C OR ALT-W, T**
WPWin 6.0 Keyboard: Navigation		
#359	Go to the top of the document	**CTRL-HOME**
#360	Go to the bottom of the document	**CTRL-END**
#361	Go to a specific page	**CTRL-G, TYPE PAGE #**
#362	Go to the next word	**CTRL-→**
#363	Go to the beginning of the next paragraph	**CTRL-↓**
#364	Go to the beginning of the previous paragraph	**CTRL-↑**
#365	Go to the next open document	**CTRL-F6**
#366	Go to the next occurrence of specific character(s)	**F2**
WPWin 6.0 Keyboard: Deletion		
#367	Delete one word (at cursor location)	**CTRL-BACKSPACE**
#368	Delete to the end of the line	**CTRL-DEL**
#369	Delete to the end of the page	**CTRL-SHIFT-DEL**
WPWin 6.0 Keyboard: Text Alignment, Paragraphs		
#370	Center	**CTRL-E**
#371	Right-justify	**CTRL-R**
#372	Indent	**F7**

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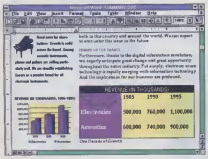
A MILLION WORDPERFECT MICROSOFT WORD. MAKE

More and more people are coming aboard the most popular word processor for Windows.* That's understandable. After all, Microsoft® Word is the world's best-selling word processor.

As well as the most acclaimed. *InfoWorld* recently stated, "We found Microsoft Word 6.0 for Windows to be the best all-around



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Teh → The

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Quick Tips

WORD 6.0 FOR WINDOWS OPEN MULTIPLE FILES

#373 It is possible to open multiple files simultaneously in Word for Windows. Select File, Open and highlight multiple files by holding Ctrl while selecting files with the mouse, or by typing the filenames separated by a space. This will launch up to nine files in separate windows.

COUNTING WORD REFERENCES

#374 Want to know how many times you reference a particular customer in a document? Select Edit, Replace and type in the customer's name for both Find and Replace. Click on Replace All and Word will tell you how many times it replaced the reference—hence the number of times you mentioned it.

CREATE VERTICAL BLOCKS

#375 Do you need to call out the text in a tabbed column by italicizing it? Hold down Alt while you drag to block a rectangle around the column's text. You can now format the selected text as you would a highlighted word or paragraph.

SELECT THE ENTIRE DOCUMENT

#376 To select an entire document, press Ctrl-A or Ctrl-5 (on the numeric keypad).

COPY FORMATTING

#377 Using the Format Painter icon is a great way to copy formatting once. But did you know that if you double-click on the icon, it remains in use? Copy formatting to your heart's desire and click on the button again to deselect it when you're finished.

EDIT WHILE REPLACING TEXT

#378 Notice a phrase that you want to change while you're using Find or Replace? Instead of closing the dialog box, move it to the side, click in the document window and change the text. To continue your search, click on Find Next in the dialog box.

LINE, PARAGRAPH, DOCUMENT

#379 Double-click in the space to the left of the text once to select a line, twice to select a paragraph, or three times to select an entire document.

works if you put the insertion point any place in the first line, but sometimes it doesn't. Place it at the beginning of the line to avoid trouble.) Choose Tools, Macro, Play to run the DROPCAP macro. You'll be given a chance to change the font and size of the drop cap. Make changes or accept the defaults and the first letter will be placed in an unbordered text box so that the rest of the type wraps around it on the right.

MAKING QUICK MACROS

#380 If you need an easy way to record a macro that you don't necessarily want to keep permanently, use the undocumented quick macro feature.

Before you can record a quick macro, you need to make two changes to the menus. Click on File, Preferences and choose Menu Bar. Choose one of the sets of Menu Bar preferences. (The default menus can't be edited. If you haven't created a custom menu yet, use the Copy button to make a duplicate of one of the two defaults. Then you can edit the copy.) In the Menu Bar Editor, choose Tools from the Feature Categories drop-down box. Then scroll through the Features list until you find QuickMacro Record and QuickMacro Play. Choose both, one at a time, and drag each to wherever you want to have them among the menus. (Our suggestion: Put them with the other Macro menu items.)

When you want to record a quick-and-dirty, disposable macro, select Record QuickMacro. Perform the action you want to record and click on Record under Tools, Macros to remove the checkmark next to it. When you want to replay the macro, choose Play QuickMacro.

WORD 2.0 FOR WINDOWS SPECIAL DICTIONARY

#381 For political correctness and other reasons, you may need to avoid using some words that the spell checker won't flag because they're spelled correctly. Create an exclusion dictionary by starting a new file and typing one forbidden word per line followed by Enter. Save it as a text-only file called SP_AM.EXC in the same directory as the current dictionary file (C:\WINWORD). When

Time Saver: WORDPERFECT 6.0 FOR WINDOWS

	REPETITIVE TASK	SHORTCUT
WPWin 6.0 Keyboard: Text Alignment, Lines		
#382	Right flush	**ALT-F7**
#383	Right flush with dot leaders	**ALT-F7, ALT-F7**
#384	Center	**SHIFT-F7**
WPDOS Keyboard: Navigation		
#385	Go to the top of the document	**HOME, HOME, ↑**
#386	Go to the bottom of the document	**HOME, HOME, ↓**
#387	Go to a specific page	**CTRL-HOME, *PAGE #***
#388	Go to the next word	**CTRL-→**
#389	Go to the beginning of the next paragraph	**CTRL-↓**
#390	Go to the beginning of the previous paragraph	**CTRL-↑**
#391	Go to the next occurrence of specific text	**F2**
WPDOS Keyboard: Deletion		
#392	Delete one word (at cursor location)	**CTRL-BACKSPACE**
#393	Delete to the end of the line	**CTRL-DEL**
#394	Delete to the end of the page	**CTRL-PAGE DOWN**
WPDOS Keyboard: Text Alignment, Lines		
#395	Right flush	**ALT-F6**
#396	Right flush with dot leaders	**ALT-F6, ALT-F6**
#397	Center	**SHIFT-F6**

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Quick Tips

WORD 6.0 FOR WINDOWS
OPEN MULTIPLE FILES

#373 It is possible to open multiple files simultaneously in Word for Windows. Select File, Open and highlight multiple files by holding Ctrl while selecting files with the mouse, or by typing the filenames separated by a space. This will launch up to nine files in separate windows.

COUNTING WORD REFERENCES

#374 Want to know how many times you reference a particular customer in a document? Select Edit, Replace and type in the customer's name for both Find and Replace. Click on Replace All and Word will tell you how many times it replaced the reference—hence the number of times you mentioned it.

CREATE VERTICAL BLOCKS

#375 Do you need to call out the text in a tabbed column by italicizing it? Hold down Alt while you drag to block a rectangle around the column's text. You can now format the selected text as you would a highlighted word or paragraph.

SELECT THE ENTIRE DOCUMENT

#376 To select an entire document, press Ctrl-A or Ctrl-5 (on the numeric keypad).

COPY FORMATTING

#377 Using the Format icon is a great way to formatting once. But know that if you doub on the icon, it remain Copy formatting to yo desire and click on th again to deselect it w you're finished.

EDIT WHILE REPLACIN

#378 Notice a phrase t want to change while using Find or Replac of closing the dialog it to the side, click in document window an the text. To continue search, click on Find the dialog box.

LINE, PARAGRAPH, DI

#379 Double-click in t to the left of the text select a line, twice t paragraph, or three t select an entire docu

works if you put the insertion point any place in the first line, but sometimes it doesn't. Place it at the beginning of the line to avoid trouble.) Choose Tools, Macro, Play to run the DROPCAP macro. You'll be given a chance to change the font and size of the drop cap. Make changes or accept the defaults and the first letter will be placed in an unbordered text box so that the rest of the type wraps around it on the right.

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Time Saver: WORDPERFECT 6.0 FOR WINDOWS

REPETITIVE TASK	SHORTCUT
WPWin 6.0 Keyboard: Text Alignment, Lines	
#382 Right flush	ALT-F7

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Quick Tips

WORD 6.0 FOR WINDOWS DRAW AWAY

#398 When you double-click on a button on the Drawing toolbar, the tool remains in effect until you click on another button or start typing.

QUICK TABLE SELECT

#399 To quickly select an entire table, click anywhere in the table with Num Lock turned off and press Alt-5 on the numeric keypad. Alternately, to select the entire document, press Ctrl-5 while Num Lock is toggled off.

GRAPHICS-LADEN FILE DIET

#400 Even if you link pictures rather than embed them in your document, the file size increases dramatically because Word normally keeps an internal cache of the picture for better display performance. To keep your files lean, select Insert, Picture and click off the "Save Pictures in Document" check box to turn off the internal cache feature.

EDITOR'S TIP

RETURN TO THE SAME FILE

#401 When I leave work I'm usually in the middle of editing a document, so in all likelihood, I'll need to open it first thing in the morning. In Word 6.0, I have a simple AutoExec macro that does just that. Here's how you can create your own: Select Tools, Macro, type AutoExec for the name, and hit Create. Type FileList 1 in the blank line between Sub MAIN and End Sub, and press Ctrl-W to save it. From now on, every time you load Word, the last file you worked on will open with it.

YAEL LI-RON
ASSOCIATE EDITOR

you spell check, Word will compare your spelling with the dictionary and cross-reference the exclusion dictionary.

COUNTING WORDS

#402 Create a quick version of Word 6.0 for Windows' Word Count feature with this Word 2.0 for Windows macro that displays the estimated word count on the status bar:

```
Sub MAIN
    Dim dlg As DocumentStatistics
    GetCurValues dlg
    Print "Words in document: " + dlg.Words
End Sub
```

FIND ALL FILES

#403 Here's a macro to make Word look for all of your files instead of just DOCs when you select File, Open. Choose Tools, Macro, then enter FileOpen for the macro filename and click on Edit. Enter the following lines between the Sub MAIN and End Sub lines to replace the existing text:

```
On Error Goto bye
Dim dlg as FileOpen
GetCurValues dlg
dlg.Name = "*.*"
Dialog dlg
Super FileOpen dlg
bye:
err=0
```

Select File, Close, and click on Yes to save the changes.

UNCLUTTER YOUR SCREEN

#404 Want to work with as clean a screen as possible? Use this Word 2.0 for Windows macro to unclutter your view by removing extra bars and ribbons:

```
Sub MAIN
    ViewNormal
    ViewDraft 1
    ViewRibbon 0
    ViewRuler 0
    ViewStatusBar 0
    ViewToolbar 0
End Sub
```

WORD COUNT MACRO

#405 Although it's possible to get a word count from File, Summary Info, this information is buried several layers deep. Create a macro to provide a quicker update. Choose Tools, Macro, then type UPDATE as the new macro name, and click on Edit. Enter the following between the Sub MAIN and End Sub lines:

```
FileSummaryInfo .Update
Dim dlg As FileSummaryInfo
GetCurValues dlg
a$ = dlg.NumWords
MsgBox("The number of words in this ⊃
document is ") + a$
```

Choose File, Close, and click on OK to save. To attach hotkeys to the macro, choose Tools, Options, and click on the Category type until the Keyboard icon appears. Ensure that Global Macros is selected, choose an appropriate hotkey combination, then click on Add, Close.

WORD 6.0 FOR WINDOWS PROPER MACRO NAMES

#406 Word 6.0 for Windows uses the macro names as the text that shows up in the ToolTips balloon when you leave your mouse pointer over an icon for more than a second. It treats each capitalized letter in a macro name as a new word, so StartNewDocument becomes Start New Document. However, single-character capitalized words do not work this way. StartANewDoc becomes Start ANew Doc, not Start A New Doc. Also, sometimes the program strips off Word for Windows keywords that start a macro name. For example, Word for Windows displays InsertEnDash as En Dash. Knowing these conventions will give meaningful ToolTips to your macro creations.

MULTIPLE-DRIVE FILE OPERATIONS

#407 Here's a way to delete all files of a specific type in all directories on some or all drives on your computer from within

Time Saver: REVEAL CODES SECRETS

#408 Single-clicking on many codes in WordPerfect 6.0 for Windows' Reveal Codes window will **display a more detailed version** of the code. For example, Lft Mar may change to Lft Mar: 1.5". **#409** A quick way to **remove codes** from the Reveal Codes window is to drag them from the window.

PHOTOGRAPH BY STEVEN BARATZ

#410 Accidentally find yourself at the end of a Word 6.0 document by hitting Ctrl-End when you meant to select a line of text by hitting Shift-End? No problem. Return to your **last cursor position** by pressing Shift-F5.

#411 Use Word 6.0's AutoCorrect to **expand abbreviations** such as "asap" to "as soon as possible." Select Tools, AutoCorrect and type the abbreviation under Replace and its replacement under With.

Word. To delete all the LTR files on all your drives, choose File, Find File and then click on the search button. In the Search dialog box enter *.LTR in the File Name box. In the Location box, enter your drives separated by a semicolon, for example, C:\;D:\. Finally, check the Include Subdirectories box. Back in the Find File dialog box, select individual files you want to delete by holding down the Ctrl key while clicking on them. Click on Commands and choose Delete.

CONVERT SMART QUOTES

#412 Smart Quotes end up as unwieldy black squares when you drop Word for Windows text into most e-mail editors. Avoid the blobs by creating the following straight quotes macro:

```
ToolsAutoCorrect .SmartQuotes = 0
StartOfDocument
EditReplace .Find = Chr$(34), .Replace =
Chr$(34), .ReplaceAll
EditReplace .Find = Chr$(39), .Replace =
Chr$(39), .ReplaceAll
EditReplace .Find = Chr$(151), .Replace =
"—", .ReplaceAll
ToolsAutoCorrect .SmartQuotes = 1
```

SELECTIVE UNDO

#413 When you use Edit, Undo to undo your previous actions, Word undoes each action in sequence. But what if you want to keep your most recent edits and restore a previously deleted paragraph? Click on the drop-down arrow to the right of the Undo button on Word's Standard Toolbar and Word shows a list of your previous 100 actions.

CANCEL PRINTING QUICKLY

#414 Cancel your current print job by double-clicking on the Print Status icon on the status bar.

OLE'S HEAVY BAGGAGE

#415 If you have a document with several embedded graphics, OLE adds extra overhead to the file. Even if you delete the embedded objects, the file is still very large (sometimes 20 times larger than it should be). The only solution is to block the entire document, copy it to the clipboard, open a new document and paste. Save this new file and delete the OLE-burdened original.

ADD CALCULATOR TO TOOLBAR

#416 To add a calculator to the toolbar, create a macro by typing Tools, Macro. Type Calculator for the name, and select Create. Type Shell "CALC.EXE" in the blank line between Sub MAIN and End Sub and press Ctrl-W to save and exit. Then right-click on the toolbar, select customize, and scroll down the categories until you see Macros. Find Calculator on the right, drag it to the toolbar and assign a macro (you'll see a calculator icon there). This launches the Windows Calculator, so make sure that CALC.EXE is in the Windows directory. Similarly (and more importantly), you can add Solitaire (SOL.EXE) to your Word toolbar.

QUICK HELP FOR WORDPERFECT USERS

#417 Get to Microsoft Word's WordPerfect help by double-clicking on the WPH box on the status bar, instead of choosing Help, WordPerfect Help menu commands.

QUICK ACCESS TO REVISIONS

#418 Getting into Word's Revisions Dialog box requires a couple of steps. Instead, you can reach the Revisions dialog box in one step by double-clicking on the MRK box in the status bar.

AMI PRO 3.0 MOVING TABLE COLUMNS OR ROWS

#419 With the insertion point in a table and nothing selected, Alt-cursor arrow will move the entire current column or row. Using the right or left arrow moves the column to the right or left. Move rows by using the up or down arrows. Size, content, attributes, paragraph style, printable lines, and background shading are not lost.

For multiple rows or columns, you must first select the rows or columns you want to move. Selecting only adjacent cells and moving them with this key combo will move only the contents of the selected cells and overwrite the content of the target cells—it won't affect the entire row or column.

RELATE HEADERS TO SECTIONS

#420 If you want your headers or footers to call attention to a specific part of a document, such as "Budget Assumptions," insert a floating header or footer. Place the cursor at the section heading and select

Quick Tips

WORD 6.0 FOR WINDOWS FIND FOOTNOTES

#421 To quickly view the text of a footnote or endnote, double-click on the note's reference mark, which looks like a superscript number.

JUMP TO PAGES

#422 Something catch your eye in the table of contents or table of figures? Double-click on the reference's page number and Word takes you to the page.

SWAPPING FONTS

#423 When you open a document from a colleague without the necessary font on your system, Word swaps out the missing font with a substitute. Control which fonts Word swaps by selecting Tools, Options, clicking on the Compatibility Options tab and then the Font Substitution button. Rearrange Word's substitutions to fit the way you work.

QUICK CLOSE

#424 Close all open documents by holding down Shift and selecting File, Close All with your mouse. Note that pressing Alt-F while holding down Shift will not open the File menu, but instead will take you to the font drop-down list on the toolbar.

PRINT PARTICULAR PAGES

#425 Print only certain pages of a long document by selecting File, Print, and typing page ranges separated by a hyphen and individual pages separated by commas (for example: 2-5, 7, 21) in the Pages box.

DRAG AND OPEN

#426 The easiest way to open several files in Word is to first launch Word and minimize it. Then open File Manager (if it's maximized, click on the restore button), mark the files you want to work with by Ctrl-clicking on each of them, and drag them to the minimized icon.

GRAPHICS BACK TO SIZE

#427 To return an imported graphic to its original size, hold down Ctrl and double-click on the graphic.

ASCII TEXT MAKEOVER

#428 Want to quickly format some ASCII text (for example, a README file, some e-mail, or an Internet posting)? Just paste it into a blank document, then click on AutoFormat. You can modify the format using style sheets and templates.

Quick Tips

WORD 6.0 FOR WINDOWS EDIT ICONS

#429 To edit toolbar icons, select Tools, Customize. Click on the Toolbars tab in the Customize dialog box. Select categories until the icon you want to modify is visible and drag it to the toolbar. Right-click on the icon and select the Edit Button Image option.

QUICK PASTE

#430 If you want to make Paste a one-key function, select Tools, Options and click on the Options dialog box's Edit tab. Put a check next to Use the INS Key for Paste option. Simply pressing Insert will now paste from the Clipboard.

RECORD MACROS QUICKLY

#431 Double-click on the REC indicator on the status bar and Word opens the Record Macro dialog box. Click on REC again to end the recording process.

CELEBRITIP

CONVERT ASCII FILES

#432 When you open an ASCII text document, WordPerfect 6.0 for Windows will automatically offer to translate the file from "ASCII Text (DOS)." Don't always accept the offer. Instead, tap the down arrow once. You'll see "ASCII Text CR/LF to SRt (DOS)." WordPerfect will replace the hard carriage return that ends each 80-character line of most ASCII files with WordPerfect's Soft Return so that the lines will wrap normally. The translation isn't perfect, but on the whole you'll have a document that's much easier to edit.

RON WHITE
SENIOR CONTRIBUTING EDITOR

Page, Header/Footer and click on Floating Header/Footer in the dialog box. Select your options and click on OK. Ami Pro will put you on the *next* page, where you can type your header. If your editing moves the section heading to another page, the header or footer moves with it. Ami Pro repeats the floating header/footer until it encounters another one or an inserted page layout.

WHERE'S THIS GRAPHIC STORED?

#433 To find where your imported graphics are stored, choose View, View Preferences and turn off the Pictures option. Each frame displays an X instead of the picture and the graphic's path and filename are displayed at the top of each frame. If, however, you used the Copy Image option to store a graphic inside an Ami Pro file, this feature will not work because the image is inside the file, not associated by a link.

EASIER STYLE AND MACRO SELECTION

#434 Confused by the large number of styles that come with Ami Pro? If you find you use only a few on a regular basis, create a second directory under AMIPRO called STYLES2 and move less frequently used styles there. If you need a style from STYLES2, select Tools, User Setup and click on the Path button. Change the path for Styles to C:\AMIPRO\STYLES2. Move

Time Saver: WORD 6.0 FOR WINDOWS

REPETITIVE TASK		SHORTCUT
Selecting Text: Keyboard Operations		
#435	Select the entire document	CTRL-A
#436	Select the entire line, to first character of the next line	SHIFT-↓
#437	Select one character	SHIFT-→ OR ←
#438	Select one word	SHIFT-CTRL-→ OR ←
#439	Select the entire line	SHIFT-END
#440	Select from cursor position to the top of the document	CTRL-SHIFT-HOME
#441	Select from cursor position to the end of the document	CTRL-SHIFT-END
Selecting Text: Mouse Operations		
#442	Select a rectangular area anywhere in the document	ALT-DRAG
#443	Select one word	DOUBLE-CLICK
#444	Select the entire paragraph	TRIPLE-CLICK
#445	Select the entire line	CLICK ON LEFT MARGIN
Deletion		
#446	Delete to the end of a word, from cursor position	CTRL-DEL
#447	Delete to the beginning of a word	CTRL-BACKSPACE
Miscellaneous		
#448	Display all nonprinting characters (toggle)	CTRL-SHIFT-*
#449	Cut to the spike (multiple "clipboard")	CTRL-F3
#450	Paste from the spike	CTRL-SHIFT-F3
#451	Insert copyright symbol	CTRL-ALT-C
#452	Insert registered trademark	CTRL-ALT-R
#453	Insert trademark	CTRL-ALT-T
#454	Insert ellipsis	CTRL-ALT-PERIOD
#455	Insert nonbreaking hyphen	CTRL-SHIFT-HYPHEN
#456	Insert optional hyphen	CTRL-HYPHEN
#457	Insert nonbreaking space	CTRL-SHIFT-SPACE
#458	Switch to Print Preview	CTRL-ALT-I

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preferred and unwanted styles back and forth between these directories as your needs dictate. Similarly, you can create a C:\AMIPRO\MACROS2 path to simplify your macro choices.

PRINTING TO PREPRINTED FORMS

#459 To print to preprinted forms in Ami Pro, use the Protected Text feature to avoid printing over the printed form. Re-create the original form by typing in its text and adding the correct line spacing, tabs, and columns. Next, highlight the reproduced text of the form and select Edit, Mark Text, Protected Text. You cannot place the cursor inside protected text, so a user can input data only in the places that will be blank on the original form. To print the file, select File, Print, and click on the Options button. Check off the On Preprinted Form option and Ami Pro will omit the protected text, printing text only to the form's blank spots.

CREATE YOUR OWN ICON SETS

#460 To add your own specialized icon bars, select Tools, SmartIcons. Choose the Default icon bar and click on the Save Set button. Type in a name for the set, and click on OK. You now have a duplicate of the Default icon bar with a new name. Change the new bar by dragging unwanted Icons off it and dropping them on the list of

Time Saver: WORD 6.0 FOR WINDOWS

REPETITIVE TASK		SHORTCUT
Navigation		
#461	Go to the top of the document	CTRL-HOME
#462	Go to the bottom of the document	CTRL-END
#463	Skip one word to the right	CTRL-→
#464	Skip one word to the left	CTRL-←
#465	Skip one paragraph up	CTRL-↑
#466	Skip one paragraph down	CTRL-↓
#467	Go to a specific page or section	CTRL-G
#468	Find and go to the first occurrence of specified text	CTRL-F
Formatting Fonts		
#469	Change font (for selected text or as a toggle)	CTRL-SHIFT-F
#470	Change font size	CTRL-SHIFT-P, NEW SIZE
#471	Increase font size incrementally	CTRL-SHIFT->
#472	Decrease font size incrementally	CTRL-SHIFT-<
#473	Toggle bold	CTRL-B
#474	Toggle italics	CTRL-I
#475	Toggle small caps	CTRL-SHIFT-K
#476	Remove all font attributes	CTRL-SHIFT-Z
Formatting Paragraphs		
#477	Apply single spacing	CTRL-1*
#478	Apply double spacing	CTRL-2*
#479	Apply 1.5 spacing	CTRL-5*
#480	Left-indent paragraph	CTRL-M
#481	Remove left indent	CTRL-SHIFT-M
#482	Create hanging indent	CTRL-T
#483	AutoFormat	CTRL-K
#484	Remove all formatting	CTRL-SHIFT-N

* Not on numeric keypad.

Quick Tips

AMI PRO 3.0
LINK CAPTIONS TO TABLES

#485 To add a caption to an imported graphic in Ami Pro, put the graphic into one cell of a table and the caption into another. Place the table inside a frame and text can flow around the graphics. Disable Automatic Row Sizing when Graphics Scaling is set to Fit to Frame.

FIND AND REPLACE TABS

#486 Move a paragraph over one tab stop. Select Edit, Replace and replace the carriage returns by typing Ctrl-Tab once in the Find box and twice in the replace box.

DELETE AN ENTIRE TABLE

#487 To remove an entire table, place the cursor to the right of it. Hold down Shift and select the left arrow. Press Delete. A prompt will warn you there is a table in the space you want to delete—which is what you want to do.

EDITOR'S TIP

PHOTOGRAPH BY DAVID PERRY

VIEW DOCS ON YOUR TERMS

#488 When I receive a document from a writer, I want to be able to view its entire width, margin to margin, in my favorite font. So I created a Microsoft Word 6.0 formatting macro to do so. Select Tools, Macro, type the name ClearView and select Create. Type the following lines between Sub MAIN and End Sub:

```
EditSelectAll
FormatParagraph .Right ⊃
⊂Indent = "0.9" + ⊃
⊂Chr$(34)
ViewZoom .ZoomPercent ⊃
⊂= "90%"
Font "Arial"
CharLeft 1
```

Press Ctrl-W to save and exit.

KYLA CARLSON
ASSOCIATE EDITOR

Quick Tips

AMI PRO 3.0 PRINT SPECIFIC PAGES

#489 If you want to print nonconsecutive pages, add Ami Pro's Select Pages to Print SmartIcon. Select Tools, SmartIcons and drag the item to your personal icon bar, preferably next to the usual Print icon for speedy access.

NO HEADERS ON COVER SHEETS

#490 To keep your cover page clean, add headers or footers beginning on page 2. Place your cursor in the header or footer area of the page and select Page, Modify Page Layout. Under Modify, select Header or Footer, and place an X in the Begin on second page box.

HANDS OFF TIFF FILES

#491 If you already adjusted the brightness and contrast of grayscale TIFF files before importing them to Ami Pro, set the AUTOCONTRAST= line in AMIIMAGE.INI to OFF. Otherwise, Ami Pro makes its own adjustments to the TIFF file. Make sure that AMIIMAGE.INI is in the AMIPRO directory, not in the WINDOWS directory.

AMI PRO 2.0 SMARTICON

#492 Upgrading from Ami Pro 2.0 to 3.0? Keep your Ami Pro 2.0 SmartIcon palette by copying APIB.INI from your Windows directory to Version 3.0's Icons directory. Voilà, it's now your Ami Pro 3.0 SmartIcon palette.

PRINT DOCUMENTS FASTER

#493 The Ami Print utility improves printing speed. Select Tools, User Setup and click on Options. Highlight Print in Background and click on OK. But using Ami Print with Windows Print Manager still running actually slows printing. So go to Windows' Control Panel, select Printers, and click off the Use Print Manager option. If you use a network spooler, ignore Ami Print.

REPLACE CARRIAGE RETURNS

#494 To change from single spacing between paragraphs to double spacing, select Edit, Replace. Under Find, press Control-Enter and under Replace With, press Control-Enter twice to replace the single hard carriage returns at the end of each paragraph with double returns.

Available Icons. Add any new icons you need and click on OK. Next time you click on the button bar icon on the status bar at the bottom of the page, the name of your new icon will appear at the top of the list.

CORRECTING YOUR USER DICTIONARY

#495 To take out a word mistakenly added to your user dictionary, select File, Open, choose ASCII under List Files of Type, and open the file LTSUSER1.DIC in the AMIPRO directory. Delete incorrect words, correct misspellings you've introduced, or add new words that you'll need. Save the document and exit Ami Pro. Next time you start Ami Pro, your changes will be ready for you.

PAGE X OF XXX

#496 To have a header or footer display page numbers as "Page X of 15" in a 15-page document, position your cursor in the header or footer, type Page and add a space. Next, choose Page, Page Numbering and after specifying the correct settings, click on OK. The page number will display in the header or footer. Add another space and type the word "of" followed by a space. Choose Edit, Insert, Doc Info Field. From the dialog box, select Number of Pages and choose OK. As you continue to edit your document, Ami Pro automatically updates the total number of pages.

Time Saver: AMI PRO 3.0

	REPETITIVE TASK	SHORTCUT
Navigation		
#497	Go to the top of the document	**CTRL-HOME**
#498	Go to the bottom of the document	**CTRL-END**
#499	Go to the next page	**CTRL-PAGE DOWN**
#500	Move down one screen	**PAGE DOWN**
#501	Go to the beginning of the next sentence	**CTRL-PERIOD**
#502	Go to the beginning of the previous sentence	**CTRL-COMMA**
#503	Go to the beginning of the line	**HOME**
#504	Go to the end of the line	**END**
#505	Go to the end of the paragraph	**CTRL-↓**
#506	Go to the beginning of the paragraph	**CTRL-↑**
Text Manipulation		
#507	Bold	**CTRL-B**
#508	Centered	**CTRL-E**
#509	Italic	**CTRL-I**
#510	Left alignment	**CTRL-L**
#511	Right alignment	**CTRL-R**
#512	Normal (remove attributes)	**CTRL-N**
#513	Underline (including spaces)	**CTRL-U**
#514	Word underline (no spaces)	**CTRL-W**
#515	Delete the next word	**CTRL-DEL**
#516	Delete the previous word	**CTRL-BACKSPACE**
Miscellaneous		
#517	Undo last or previous action	**CTRL-Z**
#518	Find and replace	**CTRL-F**
#519	Go to	**CTRL-G**
#520	Save	**CTRL-S**
#521	Toggle between Draft and Layout views	**CTRL-M**

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Quick Tips

AMI PRO 3.0 TOGGLE BETWEEN PAGE VIEWS

#522 Enjoy using Ami Pro's various views to verify layouts? Add one of Ami Pro's toggle SmartIcons to simplify page layout and editing choices. The icons switch you between full page and layout, outline and layout, or draft and layout views. Need to toggle the Fit to Screen view? Add the View Fit to Screen SmartIcon. Now the page-view toggle will switch between fit to screen and full page.

QUICK STYLE SWITCH

#523 To change paragraph styles on the fly, use Ami Pro's find and replace function—it's not just for text. Select Edit, Find and Replace and type in the name of the respective function keys (for example, F8) for the styles in Find and Replace. Click on Replace All, and the current document styles will change.

MULTIPLE-FILE CORRECTIONS

#524 Need to correct the spelling of a client's name in several documents? Ami Pro ships with the macro FREPLACE.SMM to help you. Select Tools, Macros, Playback and double-click on FREPLACE.SMM from the list of Macros. A Find and Replace dialog box will pop up with a list of documents to search. Highlight the files you need to change and click on OK.

ADD WORDPERFECT 5.X FILTER

#525 If WordPerfect 5.x isn't listed under List files of type in the File, Open menu, activate that filter manually. The file you need, WP.FLT, is likely installed in your \AMIPRO directory, but you need to edit AMIPRO.INI in a text editor. Add the following under the [Filters] section:

```
WordPerfect 5.x=C:\
~ AMIPRO\wp.flt, T,,*
```

CHANGING YOUR STYLE

#526 To change your default style in Ami Pro, start the program and select Style, Modify Style. From the Style list, choose Body Text and change the defaults for font, size, alignment, and other options in the dialog box, then select Save. Modify other existing styles in the same way. To create a new style name, make your changes and then select Save As, type the new name and select OK. Select the Alignment option and set your indents, then make any other changes you need and select Save again.

FORCED SAVINGS

#527 If you get so wrapped up in the work you're doing that you forget to save it periodically, use Ami Pro's automatic save feature. Select Tools, User Setup and click on the box next to Auto Timed Save and enter the number of minutes between Ami Pro's automatic saves. If you'd also like automatic backup files, click in the Auto backup box. Click on the Paths button and in the box labeled Backup type a directory name that is different from the current directory.

MULTIPLE DOCUMENT PRINTING

#528 Ami Pro includes the macro PRNBATCH.SMM to print several files at once. Choose Tools, Macros, Playback, select the PRNBATCH.SMM macro from the list, and click on OK. (Note that a shortcut key can be assigned to execute these steps.) Use the mouse to select the documents from the files list, and click on Options to select multiple copies of a specific file, specify a page range, or to reverse, collate, or include crop marks while you print. Press the Save button after you've changed the options for each file and click on OK. When you've completed your selection of files to print, click on OK to print now or click on Time to establish when the Later option will print the files.

Speed Boost: DISABLE SPLASH SCREEN

#529 If you want Ami Pro 3.0 to start faster, **skip the startup logo.** In Program Manager, highlight the Ami Pro icon and select File, Properties. In the Command Line box, after AMIPRO.EXE, type a space and /L. Click on OK to save the change.

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Circle 215 on reader service card.

Number Crunchers

Quick Tips

1-2-3 RELEASE 4 FOR WINDOWS MAINTAIN ORIGINAL FORMULA

#530 Type a formula such as 3/4, and the result, 0.75, appears in the control panel. If you want to display the formula instead, precede it with an equal sign like this: =3/4.

CHANGE COLOR

#531 There are only two color selections for the edit line: Gray and White. To change the color from gray to white, edit the 123R4.INI file in the Windows Notepad. Change the line that reads great_looking_dialogs=2 to great_looking_dialogs=0. Save the 123R4.INI file and restart 1-2-3. Making this change also changes the background color of most dialog boxes from gray to white.

CAN'T GET A PARTIAL BLOCK?

#532 If you highlight some text within a text block and then use the Edit menu's Copy, when you select Edit the Paste command will paste the entire block, not just the highlighted text. This problem occurs when a text block is in edit mode and you select a menu. To solve it, put the text block in edit mode by double-clicking on it. Click and drag to highlight part of the text and use Ctrl-C to copy the block to the Clipboard; Ctrl-V pastes it into the desired location.

THE INVISIBLE PAGE BREAK

#533 If the color of the page-break line is the same as the background color of the worksheet, you won't be able to see the page-break line. Modify the page-break line color like this: Select View, Set View Preferences. Select Grid lines and change the color of the grid lines. By default, the color of the grid lines is the same as the color of the page-break line.

SPREADSHEETS

1-2-3 RELEASE 4 FOR WINDOWS RUNNING IN CIRCLES

#534 In Lotus 1-2-3 for DOS you can find circular references by pressing /WS, but in the Windows version, that menu option doesn't exist. Instead select Tools, Audit, Circular References, OK. A dialog box with a list of the circular references in the file will appear. Or click on the CIRC indicator on the status bar at the bottom of the screen, and the cell pointer will move to the last occurrence of a circular reference. Edit it and click on CIRC again to continue to the next location.

EXPORT TO APPROACH

#535 Since Lotus Approach imports dBASE (DBF) files, set up your database table to comply with dBASE's rules. Field Headings (field names) should appear in the same row at the top of the database table, should be unique, may not exceed ten characters, and may not contain any spaces or non-alphanumeric characters (only the underscore is acceptable). Each row below the field headings should contain data for one record. Each field in the first record of the database table (the first row of data below the field headings) must contain data, even if you intend to leave the field blank. If necessary, enter dummy values, such as spaces, in these fields.

To create the database table: Choose Tools, Database, Create Table. Select DBASE_IV and click on Continue. Highlight the target directory, or, if it is not in the list, type it into the line at the bottom of the dialog box after DBASE_IV. For example: DBASE_IV C:\APPROACH. Click on Continue. Replace the phrase [New Table] with the desired name for the DBF file, observing standard DOS file-naming guidelines. Click on Continue. Fill in the "Model Table" line with the entire range of the database table including field headings, and click on OK.

DBASE NEGATIVE NUMBERS

#536 In 1-2-3 Release 4.01 for Windows, when you query a dBASE file that contains fields with either negative or floating-point numbers, incorrect values appear in place of the negative numbers, and no data appears at all for the floating-point numbers. This occurs because 1-2-3 Release 4.01 for Windows modifies the QODBF.INI file (which is located in the Windows directory), changing the [Types] section so it appears as follows:

```
change=BOOLEAN,DOUBLE
```

Modify the QODBF.INI file with a text editor and place a space between the comma and the word DOUBLE, and this query should work. For example:

```
change=BOOLEAN, DOUBLE
```

SEEING RED

#537 Even though you format your worksheet to display negative numbers as red (Style, Worksheet, Defaults, Colors),

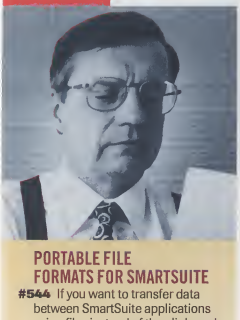
To-Do List

#538 Before translating a Lotus 1-2-3 Release 2.*x* file to one of the **international versions,** make sure that the file contains fewer than 400 range names. Exceeding that number will halt the conversion with a "Fatal error" message.

#539 If your Allways or Wysiwyg **print job crashes** due to insufficient memory, disable the Undo feature by pressing /WGDOUDQ just before you issue the print command. Don't forget to reactivate the UNDO when you're done (/WGDOUEQ).

they display in the default color. That's because a negative number will not appear in red if the cell that contains the number is formatted with another numeric format, such as currency. If you select a numeric format, the program will display the number in the text color, rather than red. Like previous releases of 1-2-3, local settings take precedence over global ones. To display the negative numbers in red, highlight the appropriate spreadsheet range, select Style, Lines-and-Color, and display the negative numbers in red locally. Optionally, select the Wysiwyg commands :Format Color Negative Red; the numbers will display correctly in any format.

CELEBRITIP



PORTABLE FILE FORMATS FOR SMARTSUITE

#544 If you want to transfer data between SmartSuite applications using files instead of the clipboard, you can use either a DBF (dBASE) file or CSV (Comma Separated Variable) file. A DBF file is the best choice: Each SmartSuite application has the ability to use DBF files to some extent. While not quite as well supported, CSV files are a close second in terms of overall usability for data transfer.

JOHN LANDRY
CHIEF TECHNOLOGY OFFICER, SENIOR V.P. OF DEVELOPMENT LOTUS DEVELOPMENT CORP.

PHOTOGRAPH BY BILL GALLERY

PRINT THIS RANGE AND THEN SOME

#540 Some print macros print more than the print range you specify. That's because the macro never cleared the previous range from memory. For example, the {SELECT} and {PRINT "SELECTION"} macro commands replace only the first print range selected in the print settings. You must add the Classic Wysiwyg command :PRCQ (Print Range Clear Quit) to clear the print range. For example, if your macro looks something like:

```
{SELECT A1..D10;A1}
{PRINT "SELECTION";1;9999;1;1}
```

Change it to:

```
:PRCQ
{SELECT A1..D10;A1}
{PRINT "SELECTION";1;9999;1;1}
```

LOTUS 1-2-3 RELEASE 2.X COMBINING PRINT FILES

#541 When you select /Print File, you may want to append the contents of the print file to one created earlier. Although Lotus 1-2-3 can't do this, you can use a DOS command, as follows:

Use the /Print File command to print the first range to a text file (for example, ONE.PRN). Print the second range to a different text file (for example, TWO.PRN). To go to a DOS prompt, select /System. At the prompt, enter the command COPY/B ONE.PRN + TWO.PRN ONE.PRN to combine the two files into ONE.PRN. Type EXIT to return to 1-2-3.

VALUE OR LABEL?

#542 When formulas don't work properly, sometimes the reason is that numbers they reference were entered as labels (with a right-align prefix) rather than values, which makes them hard to distinguish. Assuming that your data starts in cell A5, type the following formula in B5:

```
@IF(@CELL("PREFIX",A5)="""","Label",⊃
⊂"Value")
```

Copy the formula down to cover the entire range in A. You can now edit any cell identified as Label.

CONVERTING NAMED RANGES

#543 When you translate a Lotus 1-2-3 Release 2.*x* (WK1) file to a 1-2-3 Release 1a (WKS) file, the range names no longer exist.

Quick Tips

1-2-3 RELEASE 4 FOR WINDOWS MISSING DOTS

#545 The two dots (..) that identify an upper directory level when you access a local drive are not visible when you access a Novell network drive. To show the two dots from within Lotus for Windows, find the file SHELL.CFG on your hard disk and use a text editor to modify it by adding the line:

SHOW DOTS = ON

Save SHELL.CFG, exit Windows, reboot your system, and log on to the network, thereby activating the SHOW DOTS option permanently.

RENAME A GRAPH

#546 To rename a graph, select the chart by clicking on it. The chart name appears in the control panel at the top left-hand side of the screen. Select Chart, Name. In the Existing Charts list, highlight the chart name to be changed. The chart name should appear in the Chart Name box at the top of this dialog box. Highlight the entire chart name in the Chart Name box, type the new name, and select Rename.

REMOVE DROP SHADOW

#547 If you add a drop shadow to a worksheet range in 1-2-3 for DOS or 1-2-3 Release 1.1 for Windows and then open the file in 1-2-3 Release 4 for Windows, the Drop Shadow SmartIcon will remove only the frame, not the drop shadow itself. You'll need to use the Wysiwyg Classic menu to get rid of it. This is because drop shadows are considered a Wysiwyg formatting attribute. To remove Wysiwyg drop shadows in Lotus 1-2-3 Release 4 for Windows, use the following command:

:Format Lines Shadow Clear

LOTUS 1-2-3 RELEASE 2.X OVERPROTECTIVE FILES

#548 Say you have a globally protected file. If you Drag-Move a range of unprotected cells over another range of unprotected cells, the source range becomes protected. That's because a Drag-Move operation moves the default style attributes as well as the cell contents. In order to retain the unprotected style attribute in the source range, use keyboard shortcuts rather than a Drag-Move. Press Ctrl-X to cut the source and Ctrl-V in the new range to paste it.

Quick Tips

LOTUS 1-2-3 RELEASE 2.X CHANGE DEFAULT DIRECTORY

#549 In 1-2-3 Release 2.x, the default directory can change automatically to the directory from which the command 123 was entered. Set the default directory (/WGDD), and don't specify a drive or directory. Select Update to save the blank default directory. Load 1-2-3 from another program directory (make sure 123 is in the DOS path statement). Check /WGDD; the default directory in 1-2-3 is now that program directory.

PROTECT YOUR DATA

#550 If your spreadsheet contains sensitive data, save it with a password, as follows: select /File Save and type " p" (a space followed by p) after the filename. Type a unique password and press Enter, then repeat it for verification. The password is case-sensitive and cannot be deciphered later on, so proceed with caution. To remove a password, select /FS, and hit Backspace to remove the [Password Protected] message following the filename. Press Enter, then R for Replace.

USING GRAPHICS

#551 Lotus installs a handful of graphics, just enough to whet your appetite, but can use any CGM file you have on your hard disk. Thousands of color and black-and-white CGM graphics are available commercially and as shareware.

SUPPRESS THOSE PESKY ZEROS

#552 In some cases, a zero in a cell containing a formula is not acceptable. To replace those zeros with blanks, use an @if function instead of the original formula. For example, if the formula is A1-10, replace it with: @IF(A1-10=0,"",A1-10)

GRAPH TITLES AND LEGENDS

#553 Setting up legends in a graph (/GOL) is a repetitive task, since you're probably retyping information from the spreadsheet. To reference a range instead of retyping all the words, type a backslash (\) followed by the range name or address. You can also reference a cell in the graph title using the same method.

This poses a problem if you ever need to convert the file back to WK1. Here's what you should do to prevent that: In 2.x, select /Range Name Table to create a table of the range names and their references. Select /Range Name Reset to delete the range names from the file, and save the file. Translate from WK1 to WKS and re-create the range names based on the information stored in the Range Name Table. Note that re-creating the range names could take a long time if there are more than 15 or 20.

KILL OFF ERRS

#554 A formula containing a division (including @AVG, which performs a division) results in ERR if the range it references contains blank cells. Use @IF and @ISERR to eliminate the ERR and leave the cell blank instead. For example, if the original formula is @SUM(F4..F234)/D4, replace it with:

```
@IF(@ISERR(@SUM(F4..F234)/D4),"",↵
↳@SUM(F4..F234)/D4)
```

Or, if you want to display a message instead of the null, your formula may look something like:

```
@IF(@ISERR(@SUM(F4..F234)/D4),↵
↳"Missing Information",@SUM(F4..F234)/D4)
```

which will display the words "Missing Information" in the cell containing the formula. Note that the message must be surrounded by quotation marks.

MORE ON RANGES

#555 Using /File Combine, you may paste specific ranges from one file into another. The drawback of this operation is that it doesn't carry forward the range names. You may create a table of the existing range names (/Range Name Table) prior to combining the file, and then use the information in the table to re-create the range names. A more efficient way is to write a macro to do so. The example below assumes that a Range Name Table was created and saved in the Lotus 1-2-3 file, before it was combined into the current file. Suppose the table range is AA1..AB100, and that AA1..AA100 contains the range names and AB1..AB100 contains the cell locations. Enter the following formula in the first row of the next blank column (AC1):

```
+"/RNC"&AA1&"~"&AB1&"~"
```

Copy the formula down to the end of the table range. In this example, copy from AC1..AC1 to AC2..AC100. Move the cursor to AC1, and select /Range Name Create. At the prompt, enter a backslash (\) and any letter from A to Z to name the macro. To recreate range names, invoke the macro by pressing the Alt key and the letter you specified.

ROUNDING TO THE NEAREST PENNY

#556 Use the following formula to round the content of cell G5 up to the nearest penny:

```
@IF(@ROUND(G5,10)-@INT(G5*100)↵
↳100>0,@INT((G5+0.01)*100)/100,G5)
```

For example, if G5 contains the value 4.100001, the above formula will round to 4.11; for 4.1101, 4.12 will appear. This is a common example for computing sales tax.

Lotus 1-2-3 Release 4 for Windows has a far more elegant solution in @ROUNDM, which rounds to the nearest multiple.

ROUNDING TO THE NEAREST NICKEL

#557 Suppose the number 10.23 is in cell A3. To round the number up to 10.25 (the nearest nickel), enter the following formula in another cell. The entire formula should be entered in one cell.

```
@IF(@RIGHT(@STRING(A3,2),1)<="2",@↵
↳INT(A3*10)/10,@IF(@RIGHT(@STRING↵
↳(A3,2),1)<="6",@INT(A3*10)/10+0.05,↵
↳@INT(A3*10)/10+0.1))
```

If the last character of the number in cell A3 is less than or equal to 2, the number is rounded down. For example, the number 10.22 is rounded down to 10.20. If the last character of the number is greater than 2 and less than or equal to 6, then the number is rounded to 5. For example, the number 10.23 is rounded up to 10.25, and the number 10.26 is rounded down to 10.25. All numbers greater than 6 are rounded up. For example, the number 10.27 is rounded up to 10.30.

GRAVEYARD SHIFTS

#558 To calculate the total hours worked during a shift spanning across the a.m. and p.m. periods (for example, from 8 p.m. to 4 a.m.), create the following entries in your spreadsheet:

- In cell D1: Enter .999999 (the equivalent of 12 p.m.)
- In cell D2: Enter @TIME(20,0,0) (start time, 8 p.m.)
- In cell D3: Enter @TIME(4,0,0) (stop time, 4 a.m.)
- In cell D4: Enter (D1-D2)+D3 (total)

Format cells D1 and D4 as short international, (Range Format Date Time 4),

To-Do List

#559 If you want to make a Lotus 1-2-3 Release 3.*x* macro **branch when Wysiwyg is running,** begin the macro with {ONERROR \A}/AAWYSIWYG. . . .

#560 If you run Lotus 1-2-3 Release 3.*x* in Wysiwyg mode under Windows, set up a PIF to run it in **Full Screen** mode. Windowed mode is likely to distort the display. If you need to briefly switch to a windowed mode, press Alt-Enter. When you're finished, press Alt-Enter again to return to Full Screen.

and D2 and D3 as Lotus standard long form (Range Format Date Time 1). The total number of hours the employee worked is displayed in cell D4.

REMOVE A CIRCLE FROM RELEASE 2.4

#561 When you select the circle SmartIcon in Lotus 1-2-3 Release 2.4 (applying a circle around the contents of the current cell), it's not obvious how you can delete the circle later. Clicking on the SmartIcon again doesn't toggle it off the way you would expect. Instead, you need to select :Graph, Remove (the colon activates the Wysiwyg menu). This will remove the circle, but the cell's contents will remain intact.

CELEBRITIP

CREATE CUSTOM AUTOFILLS IN EXCEL 5.0

#564 Sun-Sat or Jan-Dec are not the only autofill lists available to you in Excel. You can create your own autofill list by following these steps: Select a list in your Excel sheet that you wish to designate as Autolist, select Tools, Options, and click on the Custom Lists tab. Click on the Import button, and your selected list will be added to the existing Custom Lists. Alternately, when in the Custom Lists dialog box, you may type your list under List Entries, separating items with commas. And here's a bonus tip: Press Ctrl-; to quickly enter the correct date in the current cell. Press Ctrl-: to enter the current time.

BILL GATES
CHAIRMAN AND CEO, MICROSOFT

SAME DAY EVERY MONTH

#562 It's possible to create a formula to generate the same day every month for any number of years. (If you're setting up a payment schedule, for example, you need to set up same-day column headings.) First create a 3-column by 12-row table as shown below:

	E	F	G
1	1	31	31
2	2	28	29
3	3	31	31
4	4	30	30
5	5	31	31
6	6	30	30
7	7	31	31
8	8	31	31
9	9	30	30
10	10	31	31
11	11	30	30
12	12	31	31

Column E contains the numbers 1 to 12, representing the months January through December. Column F contains the number of days in a normal year for the month specified in column E. Column G represents the number of days in a leap year for each month number in column E. Name the range TABLE by selecting /Range Name Create, type TABLE, and press Enter. Specify the range as E1..G12. Using the @DATE function, enter the desired day of the month in cell A1. For this example, enter @DATE(94,9,15). This will yield the number for 15-Sep-1994. Enter the formula listed below in cell A2:

```
+A1+@IF(@MOD(@YEAR(A1),4)=0,↲
↳@VLOOKUP(@MONTH(A1),$TABLE,2),↲
↳@VLOOKUP(@MONTH(A1),$TABLE,1))
```

Copy the formula from A2 down column A, to generate the 15th day of each month for any number of years. If the date in cell A1 is changed, all the dates in column A will change accordingly.

FIRST DAY OF EVERY MONTH

#563 Use the @DATE function in conjunction with @IF to generate the first day of every month. For example, enter the beginning date in cell A1. (For

Quick Tips

LOTUS 1-2-3 RELEASE 3.X WHICH ADD-INS ARE LOADED?

#565 1-2-3 Release 2.2 has an @ function called @ISAPP that checks whether an add-in application is attached to the program. @ISAPP is not available in 1-2-3 Release 3.*x* because add-ins are loaded instead of being attached. To get a listing of add-ins that are active in 1-2-3 Release 3.*x*, select Alt-F10 Table Applications. This will list, in the specified range, all the current add-ins. To specify Alt-F10 in a macro, use {APP4}.

CENTERING LABELS

#566 If you use :Text Align Center to align labels in two adjacent cells, Wysiwyg resets the text alignment range to include both columns. Wysiwyg does not center each label in its own respective column and cell; instead, it centers the text across both columns and the labels appear to be truncated. To properly align individual labels in adjacent columns, you should first insert a column between the adjacent columns (/WIC), center the individual labels in their respective cells (:TAC). Then hide the inserted column (/WCH).

DAY OF WEEK

#567 The following formula derives the day of the week from any date (using @DATE or @NOW):

```
@MOD(@DATE(91,4,16),7)
```

This formula yields values for the days of the week, as follows: 1=Sunday, 2=Monday, 3=Tuesday, and so on.

STRIP THE MINUTES

#568 If you need to display only the hour in a time formula, use the following line of code:

```
@MOD(@HOUR(@NOW)+11,↲
↳12)+1
```

You can perform further calculations by referencing that formula's cell.

HOW MANY WEEKDAYS?

#569 To calculate the number of weekdays elapsed between the dates entered in cells A1 and A2, type the following formula somewhere else:

```
(@INT(A2/7)-@INT(A1/7))↲
↳*5+@MAX(0,@MOD(A2,7)↲
↳-1)-@MAX(0,@MOD(A1,7)-2)
```

Now you can perform calculations in another cell, referencing that formula's address.

PHOTOGRAPH BY DAVID STRICK

Quick Tips

LOTUS 1-2-3 RELEASE 3.X IT'S A DATE

#570 The following macro saves the current file with today's date as the name:

```
+"/FSFILE"&@STRING↘
↖(@day(@now),0)&"~"
```

INTERESTING FORMULA

#571 The following formula calculates interest and principle for the first year of a loan:

```
@PV(pmt,rate/12,(n-1)*12)
```

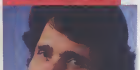
QUICK SUM

#572 Use the following macro to put a dotted line and a sum at the bottom of a column of numbers:

```
'{DOWN}@SUM↘
↖({UP 2}.{END}{DP})~
```

If you need a double-underline instead of a dotted line above the sum, replace the dash (-) in the macro with an equal sign (=). Then place the cellpointer immediately below the last entry before you invoke this macro.

EDITOR'S TIP



FIX BAD FORMULAS IN EXCEL 4.0 OR 5.0

#573 Debugging a series of complex formulas is a waste of time. You can isolate errors more quickly by calculating one portion of a formula at a time. First select the cell and press F2. Next, select an expression using the mouse or by holding down Shift as you move the cursor with the arrow keys, then press F9. Excel compiles the numeric expression into a value. Repeat the process as necessary until the entire formula produces a value.

ROBERT BAYLEY
PROJECT LEADER

09/01/94, type @DATE(94,9,1), which will yield a serial number.) Enter the following formula in cell A2:

```
@IF(@MONTH(A1)=12,@DATE(@YEAR(A1)↘
↖+1,1,1),@DATE(@YEAR(A1),@MONTH↘
↖(A1)+1,1))
```

Copy the formula in cell A2 down column A to generate the first day of every month for any number of years.

LOTUS 1-2-3 RELEASE 3.X CHANGE DEFAULT DIRECTORY

#574 If you want your default directory (where your data is saved) to be the one from which you type the 123 command, make sure that the Lotus directory is in the DOS path statement and create an auto-executing macro (\0) as follows:

```
/WGDD{ESC}~Q/WEY
```

Save this macro in a file called AUTO123, the default Autoexecuting file in Lotus 1-2-3, and the macro will be invoked every time you load Lotus 1-2-3, resetting your default directory.

PRINTING MULTIPLE COPIES

#575 Assuming that you have a print macro called \P, enter the desired number of printouts in a cell, name it COPIES, and write the following \A macro to invoke \P in the specified times:

```
\A  {FOR A1,1,COPIES,1,\P}{CALC}
```

STOP AUTOEXEC MACRO

#576 If a spreadsheet contains a \0 macro, that macro executes every time you load the file. To have more flexibility, add {?} at the beginning of the macro, in conjunction with an opening screen that explains the user's choices, as follows: Press Ctrl-Break to cancel the macro, or Enter to continue.

INVALID STRING ARGUMENT

#577 When using the macro commands /XN or /XL in 1-2-3 Release 3, you receive the error message "Invalid string argument," even though the same macros used to work in 1-2-3 Release 1a, 2.01, and 2.2 without a problem. Check for a slash (/), a semicolon (;), or a dash (-) within the prompt string. For example:

```
/XNEnter cost/revenue ratio: ~a10~
/XLEnter name; use today's code: ~a10~
/XLEnter date (MM-DD-YY): ~a10~
```

Previous releases of 1-2-3 allowed the presence of either of these special characters within /X commands; 1-2-3 Release 3 does not. If the prompt string contains one of these characters, use the advanced macro commands {GETNUMBER} and {GETLABEL} or remove the offending character from the prompt string. For example, the above /X commands would read:

```
{GETNUMBER "Enter cost/revenue ratio: ↘
↖",a10}
{GETLABEL "Enter name; use today's code: ↘
↖",a10}
{GETLABEL "Enter date (MM-DD-YY): ",a10}
```

COMBINE @INDEX AND {PUT}

#578 @INDEX is the opposite of {PUT}. Used together, they can be a powerful combination. The syntax of @INDEX is @INDEX(TABLE,COL,ROW). The syntax of {PUT} is {PUT TABLE,COL,ROW,VALUE}. For example: To convert several values in a table, insert a blank column, enter a formula, select /Range, Value for the whole column, and delete the original column. Or use a macro that will go down the column, extract the number with @INDEX, convert it, "put" it back, then increment the row counter.

```
\C  {FOR ROW,1,@ROWS(TABLE)-1,1,\P}~
\P  {RECALC BLOCK}{PUT↘
↖TABLE,COL,ROW,CONVERT}
```

Note: The cell CONVERT contains the formula that converts the data (for example, @INDEX(TABLE,COL,ROW)*5%). Make sure to set COL correctly before starting the macro.

MICROSOFT EXCEL 4.0 THE SAVE() FUNCTION

#579 Page 368 of the Microsoft Excel Function Reference for Excel 4.0 states that the SAVE() command is "Equivalent to choosing the Save command from the File menu." That statement is not entirely accurate. The main difference: Using the SAVE() macro function in an Excel macro causes the active document to be saved in the same format in which it was last saved. To specify that you want to save the worksheet in the Normal (for example, Excel 4.0 worksheet) format, use the SAVE.AS() function and assign the type_num argument a value of 1, as in the following example: SAVE.AS(,1).

MICROSOFT EXCEL 5.0 GOING PLACES

#580 You can go to a cell or range using a variety of methods. The Goto menu is the left-most box (below the Font box) and

PHOTOGRAPH BY JULIE CHASE

To-Do List

#581 One way to make a Microsoft Excel 5.0 table easy to read is to **format every other row in color.** To do so, select the first row, then Ctrl-select every other row in the table. Then select the color button (the one that looks like a paint can) to apply a color to the selected rows. By default, that color is gray.

#582 You probably know that you can type =NOW( ) or =TODAY( ) to **display the current date.** But did you know that Ctrl-; (Ctrl-semicolon) is the equivalent of =TODAY? It will display the date in the mm/dd/yy? format. The difference is that entry won't be updated the next time you load the spreadsheet.

displays a list of named ranges when you click on the down arrow next to it. To go to a specific address, just click in that box and type the address. Alternately, the Goto key is F5, which opens a dialog box in which you type the address or select named ranges from a list. Better yet, it keeps track of all your previous Gotos, so you can go back.

REPEAT ENTRIES IN WORKSHEETS

#583 Many users set up their workbooks so that each sheet contains data from a different department or division, and in addition they create one that consolidates all the data. If you need to create separate sheets for each department, you don't need to enter the template repeatedly into each sheet. Instead, select the number of sheets you need to set up by clicking on one tab and then Shift-clicking on the last one (for example, Sheet1 through Sheet6). Proceed to enter labels, formulas, and special formatting in the active (or visible) sheet, and everything you type will be duplicated in the other sheets.

OVERRIDE DEFAULTS

#584 To override Excel's defaults, create a new workbook and set different formatting configurations. Save the workbook as a template and name it BOOK.XLT. Store this template in the XLSTART subdirectory, and it will become your default template.

IN THE RED

#585 You may quickly identify negative numbers in a range by formatting them with conditional colors: black for positive and red for negative. To do so, highlight the range, click on the right-mouse button, select Format, click on the Number tab, and type the following in the Code box:

$#,##0.00_);[Red]($#,##0.00)

All the numbers in that range will be formatted as Currency (with a dollar sign). If you want to display the numbers without the dollar signs, remove the $ from that formula.

QUATTRO PRO FOR DOS THE EASIEST WHAT-IF YET

#586 You can use the sophisticated What-If tool to evaluate the outcome of different actions, but the fastest method (and the easiest one to learn) is the Undo feature. For example, reduce the budget by 12 percent, look at the results, and press Alt-F5 (Undo) to return to the original spreadsheet. Now reduce by 11 percent and press Alt-F5 again. Piece of cake! The Undo keeps two "snapshots" in memory: your active spreadsheet and the previous step. Use it as a toggle to go back and forth between these two screens.

GET TO THE BOTTOM OF IT

#587 The End-arrow combination is one of the most efficient ways to navigate your worksheet. Pressing End followed by a down arrow will move the cell pointer to the next block of cells or to the next blank. If you want to use this method to get to the bottom of a column but the column contains several blank cells, it's anything but a shortcut. Here's a quick solution: Place your cellpointer anywhere in the column, press Ctrl-I (insert), select Column, and press Enter. Press End followed by a down arrow (don't panic, you're supposed to be in row 8192...), press the right arrow once, and then press End followed by the up arrow. You'll be at the bottom of your column. Now press the left arrow, select Edit, Delete, Column, Enter, and you'll get rid of the blank, temporary column.

ADD LIFE TO YOUR GRAPH TITLES

#588 Rather than the boring graph titles created by Quattro Pro in the Graph, Text menu, use Annotate to put your titles in boxes, with different colors and fill patterns. Select the Text tool in Annotate (it looks like a T in a box), type the title, change colors, borders, box shape, and so on. For more dramatic effects, move that text box from the top to a different position on the screen.

QUATTRO PRO 5.0 FOR WINDOWS ENTERING DATES

#589 If you enter a date into a single cell, press Ctrl-Shift-D before typing the date. The word Date appears on the status bar (if it doesn't, repeat the key press). If you type a date without Ctrl-Shift-D, it will get calculated. For example, 8/28/94 will display as 0.0030395. To type dates into a range of cells, preformat the range as follows: Block the range, right-click on the mouse, select Block Properties, Date, Long Date Int'l.

Quick Tips

MICROSOFT EXCEL 5.0 GO TO ANOTHER SHEET

#590 To go to a cell or named range in another sheet, type the sheet name followed by an exclamation mark and the range. For example, in the Goto dialog box, type SHEET3!F5 or BUDGET!TOTALS.

STAY IN THIS CELL

#591 Veteran Lotus 1-2-3 users know that pressing Enter after an entry into a cell keeps the cellpointer in the same cell. If you've migrated from Lotus and are used to that method, you can set Excel to operate similarly by choosing Tools, Options, clicking the Edit tab, and deselecting the Move Selection After Enter option.

LOST YOUR PLACE?

#592 If you use the scroll bars to move around the worksheet and the active cell is no longer visible, you can redisplay the active cell by pressing Ctrl-backspace.

EDITOR'S TIP

WIN HORIZONTAL SPACE

#593 Got an Excel 4.0 spreadsheet chock-full of columns? You can reclaim horizontal space by making column headers read vertically instead of horizontally. Preselect the cells you wish to format, choose the Format menu, and click on Alignment. Then pick a vertical orientation for your text. In Excel 5.0, select Format, Cells, Alignment. This also makes for more attractive hard copy.

SEBASTIAN RUPLEY
FEATURES EDITOR

PHOTOGRAPH BY STEVEN BARATZ

Quick Tips

QUATTRO PRO FOR WINDOWS HIGHLIGHT EVERY OTHER ROW

#594 Many users like to display every other row in color. The SpeedFormat button offers two combinations that provide this effect. The first one, Mahler, paints the rows in a light-green shade, reminiscent of the old tractor-feed computer paper. Vivaldi (yet another style), paints the rows gray. If you'd like some artistic freedom to create your own color blends, you can do it manually. First, block the first row, then Ctrl-block each row in the table. Click the right-mouse button, select Block Properties, Shading, click on the two colors of your choice, and select Blend to create a custom color. Click on OK to apply the new color.

LOTUS IMPROV FOR WINDOWS MANUAL CENTERING

#595 To center an object such as a graph, paste the chart into the upper left-hand corner of the presentation page, then adjust the left and top margins to force the item into the center.

CELEBRITIP

CONTEXT-SENSITIVE MENUS

#596 Microsoft Excel and Word both rely heavily on customizable pop-up menus for a variety of formatting and editing options. To get to the menus, you click the right-mouse button. But that isn't always so easy when you're using a notebook with a built-in pointer device. Solution? Use Shift-F10 to pop up the Excel and Word for Windows context-sensitive custom menus on demand without reaching for the mouse.

ED BOTT
SENIOR CONTRIBUTING EDITOR

LOTUS IMPROV FOR WINDOWS NUMBERS APPEAR AS ZEROS

#597 Has this ever happened to you? You format a number by highlighting one or more cells and, using either the status bar or the InfoBox, apply a number format to the cells. However, as soon as the number format is applied, all the selected cells display zeros rather than the actual numbers that they contain. The reason is that the thousands separator in the Windows Control Panel International Number Format is blank. To display the actual numbers while a specific number format is applied, you must reset the thousands separator, as follows: Go to the Windows Control Panel and double-click the option for International. Click the down arrow beside the option for Country. From the list, choose a country other than the country that is desired. For example, if the desired country setting is the United States, choose a country such as the United Kingdom. Click again on the down arrow for the Country option. Select the Country that is actually desired, such as the United States. (This will reset all of the default settings for United States, including the thousands separator.) Click OK. Exit, then restart Improv to ensure that the changes made to the International Settings take effect.

Time Saver: EXCEL 5.0

REPETITIVE TASK		SHORTCUT
File Management		
#598	New	**CTRL-N**
#599	Open	**CTRL-O**
#600	Print	**CTRL-P**
#601	Save	**CTRL-S**
#602	Save As	**F12**
Editing		
#603	Undo	**CTRL-Z**
#604	Repeat last command	**F4**
#605	Copy	**CTRL-C**
#606	Cut	**CTRL-X**
#607	Paste	**CTRL-V**
#608	Find	**CTRL-F**
#609	Replace	**CTRL-H**
#610	Goto	**F5**
#611	Insert blank cell	**CTRL-SHIFT-+**
#612	Delete cell selection	**CTRL-MINUS SIGN**
#613	Edit cell note	**SHIFT-F2**
Navigation		
#614	Move down to next page of data	**PAGE DOWN**
#615	Move up to previous page of data	**PAGE UP**
#616	Move across to next page of data	**ALT-PAGE DOWN**
#617	Move across to previous page of data	**ALT-PAGE UP**
#618	Go to next worksheet	**CTRL-PAGE DOWN**
#619	Go to previous worksheet	**CTRL-PAGE UP**
#620	Move up through a selection	**SHIFT-ENTER**
#621	Move right through a selection	**TAB**
#622	Move left through a selection	**SHIFT-TAB**

PHOTOGRAPH BY JAMES McDOON

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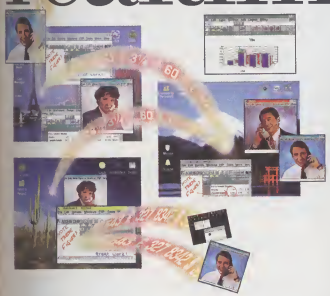
to the

realtime



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round table.

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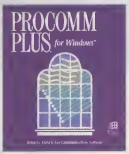

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Circle 124 on reader service card.

IMPORT FROM ASCII

#623 Use the following guidelines for preparing text in another application before you save it in ASCII format to be imported by Improv:

- Place delimiters (such as tabs, spaces, or commas) between text blocks that should appear in separate cells.
- If text contains spaces and/or a delimiter character, enclose the text in double quotes. For example, to import the string Smith, Joe into one cell, enclose it in double quotes: "Smith, Joe."
- If the text is to appear within double quotes in the Improv worksheet, precede it with two double quotes. For example, to import the string "Smith, Joe," enter it as ""Smith, Joe." Note that Improv will strip out the first double quote when it imports the file.
- Use carriage returns to separate the lines of text that are to appear on separate rows in the Improv worksheet.
- If a comma is used as a delimiter, make sure that commas are not in any numbers that are intended to appear in a single cell in the Improv worksheet.
- To have Improv treat numbers as text—for example, zip codes or phone numbers—enclose them in double quotes.
- Remove any non-ASCII characters and empty text fields from the file.

Time Saver: EXCEL 5.0

	REPETITIVE TASK	SHORTCUT
Formatting		
#624	Annotate a cell	SHIFT-F2
#625	Format selected element	CTRL-1
#626	Check spelling	F7
#627	Create chart	F11 (OR ALT-F1)
#628	Enter date	CTRL-;
#629	Enter time	CTRL-:
#630	Scroll between relative, absolute, and mixed references	F4
Selecting Ranges		
#631	All cells with notes	CTRL-SHIFT-?
#632	Rectangular range of cells around active cell	CTRL-SHIFT-*
#633	Cells with formulas that refer directly to active cell	CTRL-]
#634	All cells within formulas that refer to active cell	CTRL-SHIFT-{
#635	Only visible cells in current selection	ALT-;
Data Formatting		
#636	Apply general number format	CTRL-SHIFT-~
#637	Format as currency	CTRL-SHIFT-$
#638	Apply percentage format	CTRL-SHIFT-%
#639	Apply exponential number format	CTRL-SHIFT-^
#640	Format number as date	CTRL-SHIFT-#
#641	Format number as time	CTRL-SHIFT-@
#642	Apply two-decimal place format	CTRL-SHIFT-!
#643	Apply outline border	CTRL-SHIFT-&
#644	Remove all borders	CTRL-SHIFT-
#645	Hide rows	CTRL-9
#646	Unhide rows	CTRL-SHIFT-(
#647	Hide columns	CTRL-0
#648	Unhide columns	CTRL-SHIFT-)

Quick Tips

LOTUS IMPROV FOR WINDOWS IMPORT FROM EXCEL OR 1-2-3

#649 File-Open is only one of four methods of exchanging data between Improv and 1-2-3 (or Excel):

Fastest: Use Edit-Paste when the exchange of data is one-way (coming into Improv from another Windows application), and if it will not be necessary to bring the data back to the original source at a later time.

Create links: Paste Special can be used to create DDE or OLE links to the source data when it is important for the Improv worksheet to be linked to its source.

You'll be surprised: Re-entering the data into a new Improv worksheet can be used as a quick way to enter small amounts of data.

If you must: Use File-Open. First, examine the data in its original source (1-2-3 or Excel) to decide what types of data should be used for Improv categories; second, use the optimal options from the Worksheet Import dialog box; third, prepare the worksheet in Improv.

CALCULATE LABELS

#650 If you want to use numeric item labels in your mathematical calculations, use the following formula to convert the item labels from numeric text string to numeric values:

```
VALUE(MID(CELLNAME ⊃
⊂("Category"),1,10))
```

Substitute the category name for the word Category, and be sure to enclose it in quotation marks. Once you've entered the formula in the Improv formula pane, subsequent changes to either the category or the item names will require that the formula or worksheet is also updated. For example: If you change the category name, the formula will need to be edited manually to include the new category name. Or if you change an item name, the worksheet will need to be recalculated manually (before the cells can reflect the change). To recalculate the worksheet manually, click the Calc button on the Status Bar.

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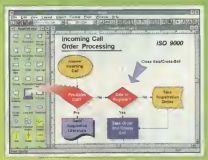

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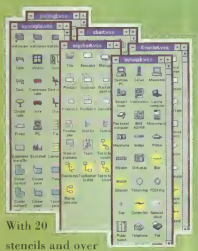

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Hand Tools to Power Tools

Quick Tips

DATABASES

FOXPRO 2.5 FOR DOS
WHAT WAS THAT FILE CALLED?

#651 If you use several database files and often forget how their names are spelled, issue the DIR command to see a listing of all the DBFs. However, an easier way is to launch a picklist by typing USE ?

CUSTOMIZE FUNCTION KEYS

#652 You can save keystrokes by assigning commonly used commands to function keys. Here's an example. At the command box, type MODI COMM CONFIG.FP and add the following lines to it:

```
F1D="USE CLIENT;BROWSE;"
F7="QUIT;"
```

and so on. The semicolon (;) stands for Enter. Select File, Close and resave the file. Quit FoxPro. When you next load the program those keys will be predefined.

DBASE COMPATIBILITY

#653 Since FoxPro is an xBASE dialect, many of the tips you see published for dBASE will work in FoxPro, and vice versa.

DBASE IV
CLEAN UP YOUR REPORTS

#654 Are you tired of the columnar reports that list last name and first name as separate columns? Fix it in the report generator, as follows. In the Detail band, delete the last name and first name fields, and press F5 for the Fields Menu. Arrow over to Calculated and press Enter on Create. Press Enter on Name, type FULLNAME, and press Enter. Press Enter on Expression, type RTRIM(LNAME)+", "+FNAME and press Enter. Note that there's a space after the comma.

DATABASES

Time Saver: COMMAND SHORTHAND

#655 Save keystrokes by using abbreviated versions of commands: FoxPro and dBASE accept the **first four characters** of any command or function in lieu of the full command. For example, type REPL for REPLACE or BROW for BROWSE.

FOXPRO 2.5 FOR DOS
CORRECTING SLOPPY DATA ENTRY

#656 You receive a database file from a colleague who wasn't too careful in the data-entry mode, and so states appear as Ca, Ny, and so on, and names are often in all uppercase. To correct these entries throughout the entire file, type the following at the command box:

```
REPLACE ALL LNAME WITH ↲
↳PROPER(LNAME), FNAME WITH ↲
↳PROPER(FNAME), STATE WITH ↲
↳UPPER(STATE)
```

A similar LOWER() function is available as well. Note that last names such as Van Dyke will convert without a hitch, but hyphenated names like Williams-Lee will appear as Williams-lee. To see if there are any hyphenated names in the file, type:

```
LIST LNAME FOR "-" $ LNAME
```

DBASE IV
UNWANTED HEADERS AND FOOTERS

#657 Suppose you wish to print your page header and footer on all pages of a dBASE IV report with the exception of the final summary page. You won't find this option in the menus. Fortunately, the open-architecture nature of user-defined functions available in most dBASE design surfaces provides a workable solution. First, create a User Defined Function (UDF). For the purpose of this example, name it Plain. The function consists of three program lines:

```
FUNCTION Plain
  gl_plain = .T.
RETURN " "
```

Next, modify the report. Move to the Page Footer band and add a non-hidden calculated field containing the following expression:

```
IIF( EOF(), Plain(), " ")
```

Note that you can't use an alternate logical expression such as RECNO()=RECCOUNT() to replace the EOF() due to indexing conflicts. If the database file is indexed, records will be out of sequence. Before saving the calculated field, make sure you modify the template to one X, since the UDF returns a space. Finally, add a page break on the Summary band to print the summary on a new page. Save and execute the report.

To-Do List

#658 Using the PACK command in dBASE IV permanently removes records marked for deletion. This can be a lengthy operation in a large database because it also reindexes the file. Rather than issuing it every time you mark records for deletion, do it just before you quit dBASE for the day. Better yet, write yourself a short program to **automate the exit process.** To "hide" deleted records, type SET DELETED ON at the dot prompt.

AUTOMATE THE STARTUP ROUTINE

#659 If you always do the same things when you load dBASE (for instance, select a database file, set the active index tag, and proceed to add records in the data entry form), set up dBASE to do it all for you. Go to a dot prompt (from the Control Center, press Esc, Y) and type:

```
MODI COMM CONFIG.DB
```

This opens the dBASE startup file in a text editor. Find the line that reads COMMAND = ASSIST and replace it with COMMAND = DO IT. Press Ctrl-End to save and exit. Now create a file called IT.PRG by typing MODI COMM IT. In the blank screen, type your startup sequence, line by line. For example, you might type:

```
USE CUSTOMERS
SET ORDER TO NAME
SET FORM TO CUSTOMERS
APPEND
```

Press Ctrl-End to save and exit. Type QUIT to exit dBASE. When you reload dBASE, you'll be in your data-entry screen.

CELEBRITIP

SMALLEST ALLOWED DATE

#663 In dBASE, a blank date is neither larger nor smaller than a real date. So either of these expressions would return a false value:

```
? {//} > {01/01/94}
? {//} < {01/01/94}
```

Thus, if you use {} as a minimum date value either directly or stored to a memory variable, it always yields .F. (a false value). This can present a problem if you use a memory variable that has been initialized with {} in the Reports Edit options/Smallest Allowed value. Using this logic and attempting to perform data entry on this field creates a situation wherein you can't enter any date whatsoever. Instead, use a minimum date value of (01/01/01).

PHILIPPE KAHN
CEO, PRESIDENT, AND CHAIRMAN
BORLAND INTERNATIONAL

HOW HOT IS IT?

#660 The following temperature conversion functions will convert degrees between the Fahrenheit and Celsius scales:

```
FUNCTION FtoC
*Fahrenheit to Celsius
PARAMETER Temperature
RETURN Temperature-32*5/9

FUNCTION CtoF
*Celsius to Fahrenheit
PARAMETER Temperature
RETURN Temperature*9/5+32
```

CALCULATE AGE

#661 This Age() function returns an accurate age from a date field or a variable:

```
FUNCTION Age
PARAMETER bd
RETURN IIF(YEAR(DATE())>YEAR(bd),;
IIF(MONTH(DATE())<MONTH(bd);
.OR.(MONTH(DATE())=MONTH(bd);
.AND.DAY(DATE())<DAY(bd)),;
YEAR(DATE())-YEAR(bd)-1,;
YEAR(DATE())-YEAR(bd)),0)
```

To use it with a DOB field, type ?AGE(DOB).

DBASE FOR WINDOWS NEW KID IN TOWN

#662 If dBASE for Windows is licensed to an employee who's no longer with your company, you can easily change the name on the license screen to that of a current employee instead. At the Command window, type MODI COMM DBASEWIN.INI —this opens the configuration file in the dBASE editor. Press Ctrl-F for Find, type User for the text you're searching for, and when Username is highlighted, press

Quick Tips

DATABASES

DBASE IV NO MORE .T. OR .F.

#664 Logical fields display the unacceptable .T. or .F. in reports. If your database contains a CURRENT field (for current status), you want to display its contents as ACTIVE or INACTIVE. To do so, go to the detail band in the report generator and press F5 for the Fields Menu. Arrow over to Calculated and press Enter on Create. Press Enter on Name, type STATUS, and press Enter. Press Enter on Expression, and type

```
IIF(CURRENT,"ACTIVE",>
"INACTIVE"),
```

Logical fields in this expression do not require an "equation" syntax (CURRENT=.T.).

LEARN THE XBASE LANGUAGE

#665 To learn programming in dBASE or any of its dialects, start by examining programs created by the code generators, such as the screen generator, report generator, and application generator. To do so, exit the Control Center by pressing Esc, Y. At the dot prompt, type DIR *.PRG to identify program files (alternately, look for *.FMT and *.FRG for screen and report files, respectively). To view CUST.FRG, type MODIFY COMMAND CUST.FRG. For a hard copy, type TYPE CUST.FRG TO PRINT. You may be surprised at how easy this language is to decipher.

DBASE FOR WINDOWS DRAG TO RUN

#666 To run any object, drag it to the Command window. If you drag a table icon, you'll open it. This is the equivalent of typing the USE and BROWSE commands, or double-clicking on the table icon.

ALL-PURPOSE FORMS

#667 Create an entry field for a form that can work with multiple databases by not specifying an alias for that field. Let's say you have a table called Customers and another called Countries. Both databases have fields named NAME. Create a form, place an entry field, and define the DATALINK property as NAME. If you open the Customer table and run the form, a customer's name appears in the entry field. If you open the Country table and run the form, the proper country name appears in the entry field.

PHOTOGRAPH BY ED KASHI

Quick Tips

DATABASES

MICROSOFT ACCESS CAN'T FIND SIZE TO FIT FORM

#668 You've designed a form and you can't find the Size to Fit Form command. This may mean the form window is maximized. To correct this, click on the Restore button (the double-arrow button) on the form's title bar.

ADD CURRENT DATE

#669 If you need to display the report's date, go to the report's header in design mode and type NOW() under the report's title.

WHERE'S THAT WINDOW?

#670 Your screen is cluttered with too many objects and windows, and you need to quickly get to the Database Window, the main menu for all your Access operations. Just press F11 and it will appear on top of all the other open windows.

APPROACH 2.1 FIND BLANK FIELDS

#671 If you need to identify all the records whose state field is blank, choose Find from the Records menu or click the Find Tool on the Approach toolbar, then click in the State field, type = (equal sign), and press Enter. Typing only the equal sign during a find request instructs Approach to search for blanks. To search for all non-blank entries, instead of the equal sign, type <> (very handy when you need to list all the foreign customers by a non-blank country field).

CALCULATE AGE

#672 To display the correct age in a form or a report, create a calculated field with the following formula:

```
IF(ISBLANK(BIRTHDAY), "NO⊃
⊂DOB", TRUNC((TODAY()-⊃
⊂BIRTHDAY)/365.25), 0))
```

CHANGING FIELD LABELS

#673 If you change the field label in the heading of a columnar report, the name in the heading does not change with it, because the name is a text block that is unrelated to the field label. To change the name, click on the field label to select it, click on the ABC Text Block SmartIcon, and click back on the field label to change it to an editable text block.

Cancel. Type a new name over the existing one, press Ctrl-W to save and exit, and exit dBASE. When you reload dBASE, the license screen will reflect the change.

MOUSING AROUND

#674 Every dBASE object has a default Run/Design mode. Double-click with the left-mouse button to run any object, and double-click with the right-mouse button to design it. For example, if you double-click on a program file, double-clicking with the left-mouse button would run the program, and double-clicking with the right-mouse button would invoke the editor and open that object's source code file. If, however, you want to activate a surface design screen, such as a form, report, or menu, press Shift-F2 on its icon. If you're not a programmer, avoid double-clicking the right-mouse button.

REALIGN THE COMMAND WINDOW

#675 If you've resized the Command or the Command Results windows, you can automatically center the two windows by double-clicking on the center separator bar.

MICROSOFT ACCESS SPEED UP ACCESS ON A NETWORK

#676 By default, Access stores all its objects—tables, forms, reports, queries, and so on—in a single file with the extension MDB. But you can make life easier on yourself by splitting that file into two files: one containing only data tables and another containing all the other application objects. On a network drive, create a new, empty data file. Import all the tables from the original MDB file and delete them from the original. Then use Access's Attach Table command (found under the File menu) to link the external data tables (stored on the users' local drives) to the application file. You'll notice speedier performance, and backups of the smaller data-only file will go faster as well.

PARADOX 4.5 FOR WINDOWS FLOATING SPEEDBAR

#677 If you like the "floating" SpeedBar effect, choose Properties, Floating, and choose one or two columns or one or two rows. You can then drag the top of the floating SpeedBar and move it where you want it.

PRINTING FORMULAS

#678 When a field object is defined as a calculated field, the formula becomes part of the ObjectPAL source. This means that the formula prints along with the other ObjectPAL methods associated with the form. To print the formulas from the calculated fields (along with the other source code) on a form, perform the following steps:

- Select any object on the form and press Ctrl-space bar to bring up the Open Methods dialog box.
- Select any method from the list of built-in methods and choose OK. (This is just to gain access to the Language menu. The method isn't actually going to be attached to the object.)
- Choose Language, Browse Sources.

This prepares a report that lists the objects, method names, and sources for each object on the form. Note: If you want a report that lists the calculated fields of a report, you can open the report as a form and follow the three steps listed above.

JUMBLED TELEPHONE NUMBERS

#679 Although a phone field is assigned the correct field format setting of (###)" "000-0000, that field occasionally displays a phone number as (000-0617, where the last three digits are the area code that should have been in the parentheses. The incorrect display is the result of incorrect data entry. The number should be entered as ten numbers—no spaces, dashes, or parentheses. If you prefer entering telephone numbers with parentheses, dashes, and spaces, select Style, Field Format, As Entered.

Time Saver: DO THE RIGHT THING

#680 Better file management is right at your fingertips: **Right-click** on file icons in a Paradox 4.5 for Windows folder to perform a variety of **file-management operations,** such as delete, copy, rename, view, export, restructure, sort, and more.

FINDING ALL BUT . . .

#681 To find all records that do not contain a particular string within a specific record, use the following formula:

```
IF(POSITION(fieldname, 'string', 1) =0)
```

This function searches the field for the string, looking for its position number within the field. If the function finds that particular string in the field, the POSITION function returns the position number of that string. This will result in a value that is not equal to zero, thus returning a false response. That record would not be included in the found set. If the string is not found, the POSITION function returns a 0. Since this is a true response, this record would be included in the found set.

EDITOR'S TIP

QUICK-SELECT FORMS IN PARADOX 4.5 FOR WINDOWS

#687 To create a one-screen interface to let users select their forms with a click of a button, follow these instructions: Create a new form as the main menu. Create push buttons by selecting the push-button tool and drawing them. Double-click on the new button to create the label and enter the name of your form. Select the button and press Ctrl-space bar to edit the button's ObjectPAL properties. Choose Pushbutton method, and add the following line between the method and endmethod lines:

```
theStatus.open("formname.fsl", ↵
↳WinStyleMaximize)
```

Enter the name of your form in place of "formname.fsl" and make sure you enclose it with quotations to make it work.

JOHN TASCHEK
ASSOCIATE TECHNICAL EDITOR

BITMAP ICONS

#682 If your artistic skills are limited, you may paste a bitmap image onto a macro button, as follows: In Design mode, add the macro button by clicking on the Draw Buttons icon, and delete the text from the Label section in the Pushbuttons Style dialog box. Choose Edit, Paste from File and specify the appropriate BMP file. Select the bitmap with the left-mouse button, and drag and place it on top of the macro button. Resize it as necessary. Click on the macro button once to select it. Hold down the Shift key and click on the bitmap in order to select both the macro button and bitmap objects at the same time. Choose Objects, then Group. Choose Edit, Attach Macro to attach the macro to the bitmap. Note: This menu choice is active only if you've created at least one macro.

LOTUS NOTES COLLAPSED VIEW AT STARTUP

#683 To view the database in a Collapsed mode (only categories, for example), you need to design a new view. Here's how: Select Design, Views; highlight the appropriate database; select Edit, Design, View Attributes, Categories, Initially Collapsed.

ON THE ROAD AGAIN

#684 Use Notes Selective Replication to take your work with you on the road. You can use the full power of Notes even when you're not connected to your LAN.

WHERE'S THAT PROPOSAL?

#685 It's easy to get lost in hundreds of saved messages. Use Edit, Find to efficiently locate documents with specific, selected words. It works across multiple databases, too.

ORGANIZE YOUR MESSAGES

#686 Don't overlook the Notes Categories, a powerful feature that many users are not aware of. Save any incoming or outgoing message according to a specific category, and future searches will be more efficient. To do so, mark all the messages you wish to categorize as one group (click on the left margin next to each message to place a check mark next to it), then select Tools, Categorize. To create a new category, just type its name in the New Categories box. If you're using Notes Release 3.0, you can preassign a category to each message you write (look for it at the bottom of the screen).

Quick Tips

DATABASES

LOTUS NOTES CREATE MNEMONIC SHORTCUTS

#688 If you don't like the fact that the views in the default View menu for the mailbox have non-mnemonic keyboard shortcuts (Alt-V, Y for All by Person?), fix the problem. In the Workspace, select your mail database, then select Design, View. Select the view you want to rename and click on New Copy. Now select File, Save and type in a name for your new view. Be sure to include an underscore (_) before the letter you designate as the shortcut key. For example, say you want to rename All by Person so you can select it with the more logical Alt-V, P. When you select File, Save, enter _Person as the name of your new view.

SELECTION SHORTCUTS

#689 If you want to select the currently highlighted document in the current view, hit the space bar. If you want to select a bunch of documents, position the pointer over the left gray margin, click, and drag through the documents you want to select. You should see the selection check marks appear one after another.

CANCEL AN OPERATION

#690 If you want to cancel a Notes operation, such as sorting a view, hit Ctrl-Break. That stops most Notes operations immediately.

HAVEN'T I READ THIS ONE?

#691 If you need to mark all documents in one database as read or unread, select Tools, Unread marks, Mark All Read or Mark All Unread.

QUICK CLOSE

#692 Double-clicking the left-mouse button opens an item in Notes. It only makes sense that double-clicking the right-mouse button will close it.

NEW MENU

#693 Notes comes with a bunch of different toolbars built in—there's one that's best for mail, one for designing databases, and so on. If you look at the lower-right corner of the Notes Workspace, you'll notice three icons. From right to left, they are: a key, a small computer network, and three boxes side by side. Click on the three boxes to see the default toolbars, or to hide the SmartIcons entirely.

PHOTOGRAPH BY STEVEN BARATZ

Quick Tips

PROGRAMMING

VISUAL BASIC 3.0 FOR WINDOWS MEMORY-HOGGING GRAPHICS

#694 There are six general practices to follow when you want graphics in your application but don't want to hog memory. First, use the image control instead of the picture box control to display bitmaps—it uses a lot less memory. Second, set AutoRedraw to False in your forms and controls; if you don't, Visual Basic keeps a copy of the bitmap it uses to repaint them, sucking up memory in the process. Third, use Run-Length Encoded bitmaps. They take up less memory than regular bitmaps and aren't any slower to load. Fourth, load bitmaps only as needed using the LoadPicture function and keeping pictures in separate files. Fifth, when you aren't using a picture, use the LoadPicture function with no argument—this empties the Picture property. Finally, if you use the Image property of a picture box or form, Visual Basic will create an AutoRedraw bitmap (even if you turn AutoRedraw off). So when you're finished with the Image property, reclaim the memory by setting AutoRedraw to False.

SPEEDY LOADING

#695 There are three general methods you need to observe to make sure your application loads quickly. First, simplify your startup form, cutting out unnecessary bitmaps and code. Instead of trying to load an entire application's functions onto this form, use the startup form as a place from which users launch other forms. Second, don't call procedures from other modules at startup if you can avoid it—Visual Basic will load the entire module if you do, and some modules can be huge. Finally, make sure that VBRUN300.DLL is loaded before you start your executable: If it isn't, the executable must load it. You can accomplish this by writing a small Visual Basic application (such as a clock) that runs all the time on your system and loads VBRUN300.DLL before any other application needs it.

PROGRAMMING

VISUAL BASIC 3.0 FOR WINDOWS LIST BOX DRAG AND DROP

#696 Visual Basic makes drag and drop easy—just use the Drag method on the source control and respond to either the DragDrop or DragOver events in the target controls. Visual Basic also gives you some flexibility in choosing the icon to display when dragging. But if you're dragging an item from a list box onto another control, wouldn't it be nice to show an outline of the item being dragged instead of an icon?

Here's how to do it: First, place a list box onto a form and add some items to the list. Then place a picture control anywhere on the same form and set its Visible property to False. In the list box MouseMove event, place the following code:

```
Sub List1_MouseMove (Button As Integer, ↵
↳Shift As Integer, X As Single, Y As Single)
  If Button And 1 Then
    Picture1.Width = List1.Width
    Picture1.Left = List1.Left
    Picture1.Top = List1.Top + ↵
    ↳(Picture1.TextHeight("Ty") * ↵
    ↳(List1.ListIndex - List1.Topindex))
    Picture1.Drag 1
  End If
End Sub
```

When you press the left-mouse button in the list box, the picture control will be positioned at the same location as the item selected in the list box, and will be sized to the item. Then, instead of dragging the list box, apply the Drag method to the *picture* box. What you get is a floating outline that represents the item in the list.

THE OLD SHELL GAME

#697 Visual Basic's Shell() function is what you use to execute another Windows application, for example, Notepad. However, there's no built-in way to tell when a shelled program has terminated. Of course, we have one.

Let's say you want to run Notepad from your application. Execute the Shell() function with "NOTEPAD.EXE" as the parameter, for example: RetCode = Shell("NOTEPAD.EXE"). Start a timer using the Timer control that comes with Visual Basic. In the Timer event, you can see if Notepad is still running by calling a Windows Software Developer's Kit function called FindWindow.

Time Saver: VISUAL BASIC 3.0 FOR WINDOWS

REPETITIVE TASK	SHORTCUT
#698 View procedures	F2
#699 Go to objects list box	CTRL-F2
#700 Go to procedure	SHIFT-F2
#701 Find	CTRL-F
#702 Find next	F3
#703 Properties window	F4
#704 Cut current line	CTRL-Y
#705 Insert blank line	CTRL-N
#706 Next procedure	CTRL-↓
#707 Previous procedure	CTRL-↑
#708 Clear to end of line	CTRL-DEL
#709 Cut to end of line	SHIFT-CTRL-DEL
#710 Shift one screen right	CTRL-PAGEDOWN
#711 Shift one screen left	CTRL-PAGEUP
#712 Beginning of procedure	CTRL-HOME
#713 End of procedure	CTRL-END
#714 Skip one word to the right	CTRL-→
#715 Skip one word to the left	CTRL-←

FindWindow searches all the top-level windows and returns a window handle that matches either the caption text or the class name you supply.

First declare the API function using this Declare statement:

```
Declare Function FindWindow Lib "USER" ↵
↳(ByVal lpClass As Any, By Val lpCaption As ↵
↳Any) As Integer
```

Then in the Timer event, use this code:

```
Sub Timer1_Timer()
  hwndNotepad =FindWindow("Notepad", 0&)
  If hwndNotepad = 0 Then
    Timer1.Interval = 0
    MsgBox("Notepad has stopped running.")
  End If
End Sub
```

As long as you're doing neat stuff with Shelled applications, set your main form's Enabled property to False. This will prevent the user from activating your application while Notepad is running. As soon as Notepad has finished, set the form's Enabled property back to True.

3-D TEXT BOXES

#716 Although Visual Basic has lots of nice three-dimensional custom controls, there is no 3-D text box. Until now: First, place a 3-D Panel control on your form. Then make it the same size as you want your text box. Set the AutoSize property to Auto Size Child to Panel, the BevelInner property to None, and the BevelOuter property to Inset. Make sure that the Panel is selected, select a standard text box from the toolbox—this makes the text box a child control of the Panel—and place the text box control on the Panel. Adjust the size of the text box to fit exactly within the 3-D border of the Panel control, giving the text box a 3-D look.

CA-REALIZER FOR WINDOWS ARRAY SORTING

#717 Realizer has the capability to extract a one-dimensional array from an array of record structures with its StatSort function. Say you have an array called (PeopleArray) of the sample record People with fields called Name, Phone, and Salary. Here's the code to sort this array by Name:

```
PeopleArray = StatSort( ↵
↳PeopleArray.Name, PeopleArray)
```

GET INI AND OUT QUICKLY

#718 During your product's installation, you want it to modify initialization files (files with names that end with INI) automatically. Use formatted EXTERNAL calls to the Windows kernel functions GetPrivateProfileString and WritePrivateProfileString. Here is a section of commented sample code to show you how:

```
EXTERNAL "krn1386" FUNC ↵
↳WritePrivateProfileString( POINTER, ↵
↳POINTER, POINTER, POINTER) AS BYTE
writeSuccess = WritePrivateProfileString( ↵
↳ "theSection", "theEntry", "theString", ↵
↳ "C:\Windows\Win.ini")
IF writeSuccess = 0 THEN
    MessageBox("Write fail", "Message", ↵
    ↳ _MB_OK)
ELSE
    MessageBox("Write success", ↵
    ↳ "Message", _MB_OK)
END IF
```

This code will attempt to write an entry into a particular section of WIN.INI and tell you if it completed the task.

ASSEMBLER NUMBERS

#719 In high-level languages such as Basic and C, it is easy to display numbers on the screen. To display a 1024 in Basic, you'd simply type PRINT 1024. In C, the command is printf("%d", 1024). In assembly language, the programmer must perform the binary-to-ASCII conversion, because there are no built-in functions to do it automatically. The following is a simple and efficient routine for displaying numbers as large as 65,535 (the largest

Speed Boost: ALIGN VB BUTTONS AND FIELDS

#720 Getting all your Visual Basic buttons and fields to **line up nicely** can be a drag—or a click-drag, depending on how you look at it. Instead of trying to line them up manually, select all the controls you want aligned and open the Property window. Set the Left property to the position where you want the controls. You can set all their widths here, too. Alternately, you can use a tool such as Sheridan Software's VBAssist, which automates this process.

Quick Tips

PROGRAMMING

VISUAL BASIC 3.0 FOR WINDOWS NO OLE2UI

#721 When you're using the Setup Wizard's Compress phase, you may get the message, "OLE2UI.DLL Not Found." The problem is that this file never existed and was included in the SETUPWIZ.INI file by accident. Use your favorite text editor to remove all references to this DLL from SETUPWIZ.INI.

SHARE AND SHARE ALIKE

#722 Say you're in the Setup Wizard's compress phase and you get the error, "Sharing Violation." All you need to do is modify the attributes of your DLLs and VBXs to read-only with the DOS ATTRIB command.

TOO MUCH MEMORY

#723 Even if you don't use graphics, your application can take up more memory than you have available. Aside from writing less code, reduce the number of forms you load at once, and load the data you need only when you need it. Organize your code in modules that can be loaded when needed and unloaded when they're not. Minimize the use of the Variant data type—it's flexible, but it also uses lots of memory. Free unused variables by setting them to Nothing. Eliminate dead code: It's generally good practice in any language, and Visual Basic doesn't even make an effort at eliminating it.

CA-REALIZER FOR WINDOWS EDITOR FONT

#724 Here's how you can change the font that Realizer's editor uses. Using any text editor, open the REALIZER.INI file in your Windows directory. Find the line that starts with EditFont=, and change the font and size after the equal sign to whatever you want. For example: EditFont=Arial Bold 10.

INVISIBLE MENUS

#725 If you want users to be able to use keyboard shortcuts for actions that are not available via menu, you need to create an invisible menu. Use the MenuNew command and attach the accelerator keys and procedures to the new menu. The secret is: Never call the MenuControl(.Show) command to keep it hidden.

Quick Tips

PROGRAMMING

ASSEMBLER SOUND OFF

#726 There are lots of ways to produce simple sounds on a PC, but none is easier than the technique that uses the BIOS's built-in Write Teletype function (interrupt 10h, AH=0Eh) to output a "bell" character (ASCII 7). Rather than displaying an ASCII 7 character on the screen when invoked this way, Write Teletype programs the PC's speaker to produce a short tone. From a programmer's standpoint, all it takes is two lines of code:

```
mov  ax,0E07h
int  10h
```

This is a handy way to make the speaker beep in an assembly language program, or in any programming language that has no built-in sound commands.

VISUAL C++ 1.5 CONTROL ALIGNMENT

#727 You created a dialog box and you want to align all the controls. Select them by clicking on the first one and Shift-clicking on the others you want aligned. Choose one of the alignment commands (Left, Right, Top, or Bottom) from the Align Controls pop-up menu on the Layout menu.

BITMAPS IN MENUS

#728 To include bitmaps (sample fonts, for example) in menus, use AppendMenu or InsertMenu. Create the bitmap in Image Editor or other bitmap-editing application, then use LoadBitmap to load the bitmap resource into memory. Finally, use AppendMenu or InsertMenu to attach it to the menu. Warning: The bitmap may not work with all resolutions and aspect ratios.

WRITE OUTSIDE YOUR WINDOW

#729 It's not a great idea to write to areas outside your windows, but if you're writing a screen saver, you may need to. BeginPaint and GetWindowDC() won't do—you need CreateDC(). Here's how to use it in C:

```
hdc = CreateDC ("DISPLAY", ⊃
⊂NULL, NULL, NULL);
```

If you need to retrieve a device context for the entire screen, call GetDC with a NULL parameter—it's undocumented, but it works.

number that can be represented with a 16-bit value) on the screen:

```
mov bx,10
xor cx,cx
label1: inc cx
xor dx,dx
div bx
push dx
or ax,ax
jnz label1
label2: pop dx
add dl,30h
mov ah,2
int 21h
loop label2
```

On entry to this routine, ax holds the integer value to be printed. After the conversion is performed and the ASCII characters constituting the number are placed on the stack, DOS function 02h is used to output each character to the standard output device (by default, the screen) as it is popped off the stack. If you encapsulate this routine into a procedure named printnum, you can print the number 1024 with the instructions:

```
mov ax,1024
call printnum
```

DOS PRINTING

#730 Before outputting data to a printer from a DOS program, it's prudent to make sure that the printer is powered up, online, and ready to accept characters. An easy way to do this is to invoke the BIOS's interrupt 17h, function 02h Get Printer Status service. Function 02h returns an 8-bit value in ah that reflects the status of the printer. On most systems, ah returns with bit 3 set if the printer is not turned on, if the printer is turned on but is currently offline, or if there is no printer attached to the specified parallel port. In assembly language, the following code checks the printer attached to parallel port LPT1 and branches to an error handler if the printer is not ready:

```
mov ah,02h
mov dx,00h
int 17h
test ah,08h
jnz error
```

The dx value specifies the printer port: 00h for LPT1, 01h for LPT2, and 02h for LPT3.

A well-written routine should also branch to an error handler if bit 5 is set. Bit 5, if set, indicates that the printer is out of paper. If bits 3 and 5 are clear, it's safe to go. A modified version of the above routine that checks bits 3 and 5 looks like this:

```
mov ah,02h
mov dx,00h
int 17h
test ah,28h
jnz error
```

Do not wait for a zero return in ah or your program could get stuck in an infinite loop. Bit 7 will be set when the printer is ready to accept characters.

VISUAL C++1.5 THE WHOLE SCREEN

#731 It's not hard to create a window without a border, title bar, and menu bar. The trick is that the window must have the style WS_POPUP. The following CreateWindow command creates a top-level window whose client area occupies the full screen:

```
hwnd = CreateWindow ("MyClass", ⊃
⊂"",WS_POPUP, 0, 0,GetSystemMetrics ⊃
⊂(SM_CXSCREEN), GetSystemMetrics ⊃
⊂(SM_CYSCREEN),
HWND_DESKTOP, NULL, hInstance, NULL);
```

Don't forget to provide a method for terminating the program or shrinking the window so that it no longer fills up the screen.

GOOD WINDOWS PROGRAMMING WHAT'S UP?

#732 As you debug Windows applications written using Microsoft's Windows Software Developer's Kit (SDK), don't forget about Windows' little-known OutputDebugString function, which

Speed Boost: BACKGROUND COLOR IN BORLAND C++

#733 Many applications provide minimal controls, menus, and windows. Suppose you want to **set the background color** of your main (and only) window in Borland C++ 4.0. It's pretty easy: When you register your window's class, set the hbrBackground member of the WndClass to a brush of the desired color.

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displays a text string on the debugging terminal. The statement

```
OutputDebugString ("Init complete; dx ⊃
⊂calling ShowWindow\n");
```

outputs the string in quotation marks to the debug terminal. Used this way, OutputDebugString constitutes a simple debugging facility similar to the PRINT statement in Basic and the printf function in C. By placing calls to OutputDebugString in strategic locations in your program, you can see what branches it is taking and messages it is processing. And—more importantly—if you don't have a separate debugging terminal set up, you can use the DBWIN utility included with the SDK to view debug output in a window on your main display.

If you need to include numeric information in the output from OutputDebugString, you can use Windows' wsprintf function to format text strings prior to displaying them. The wsprintf function works like C's sprintf function but it doesn't increase your code size. The statements

```
wsprintf (szBuffer, "The window handle ⊃
⊂is %u\n", hwnd);
OutputDebugString (szBuffer);
```

convert the window handle stored in hwnd to ASCII form and output the resulting string.

FROM WINDOWS 3.0 TO 3.1

#734 If you're building Windows 3.1 applications with Microsoft C or Microsoft C++ 7.0 and you're still using old Windows 3.0 make files, a simple change to the make files' cl commands will decrease your programs' code size and increase their execution speed. Consider the following compiler command, which was typical of Windows 3.0 make files:

```
cl -c -Gsw -Ow -W2 -Zp winprog.c
```

The w in -Gsw tells the compiler to generate special prolog and epilog (entry and exit) code for functions so the DS register will be set properly on entry. Some of this code is necessary only in real mode. If your application requires Windows 3.1 or later and will therefore be executed only in protected mode, you can substitute -GAs for -Gsw. The A option shortens the prolog and epilog code by a few bytes.

If you're compiling a DLL instead of an application, use -GDs instead of -GAs. The -GA and -GD options also allow you to do away with most calls to MakeProcInstance inside your programs.

While you're at it, there's another simple change you can make to the cl command if your application is targeted for Windows 3.1. Change -GAs to -G2As and the compiler will use 286 instructions when possible. This further reduces the code length and increases execution speed, and it further optimizes the prolog and epilog code attached to far functions. A fully modified cl command looks like this:

```
cl -c -G2As -Ow -W2 -Zp winprog.c
```

Compile the same program with both commands and compare the resulting EXE sizes. You'll be pleasantly surprised.

UNRESIZABLE WINDOW

#735 When you write a Windows app whose main window combines the styles WS_POPUP, WS_BORDER, WS_CAPTION, WS_SYSMENU, and WS_MINIMIZEBOX to create a non-resizable window that lacks a maximize button, you obviously do not intend for that window to be resized to fill the screen. Windows obligingly disables the Size and Maximize options in the system menu, but there's another way that your application can become maximized. If a user starts your application with a third-party program launcher that has an option for specifying an initially maximized window state, and if the user exercises that option when starting your program, the nCmdShow parameter passed to WinMain will equal SW_SHOWMAXIMIZED and the window will be maximized when the following statement is executed:

```
ShowWindow (hwnd, nCmdShow);
```

Fortunately, there's an easy way to prevent this from happening. Simply modify the call to ShowWindow so that it looks like this:

```
ShowWindow (hwnd, nCmdShow ==⊃
⊂ SW_SHOWMAXIMIZED ?
SW_SHOW : nCmdShow);
```

If nCmdShow equals SW_SHOWMAXIMIZED, your program will automatically convert it to SW_SHOW before calling ShowWindow. The window will then display in its intended form.

Quick Tips

PROGRAMMING

VISUAL C++ 1.5 WINDOWS CONFIGURATION

#736 If you use Windows' WriteProfileString function to write a program's configuration data to WIN.INI, or WritePrivateProfileString to copy it to a private INI file in the Windows directory, there's a better way. With the former technique, WIN.INI grows in length and Windows boots more slowly. The latter technique contributes to file clutter in the Windows directory.

Here's a simple solution. Rather than storing a private INI file in the Windows directory, store it in the directory in which your program resides. The name and location of a program's executable file are easily obtained with Windows' GetModuleFileName function. Once you have a string specifying the executable file, simply replacing the EXE extension with the letters INI, it can be accomplished with three lines of code:

```
i = GetModuleFileName⊃
⊂(hInstance,szIniFile, sizeof ⊃
⊂(szIniFile));
while (szIniFile[i--] != 0x2E);
lstrcpy (&szIniFile[i+2], "INI");
```

Pass the resulting string as the fourth parameter to the WritePrivateProfileString function and your INI file will be created in your application's directory rather than in the Windows directory.

MOVING FROM C TO C++

#737 The easiest way to move from C to C++ is to start by eliminating some of the constructs you're most used to. First, use C++'s const and inline instead of C's #define. It's easier to remember const, however, than 243.12. C++'s const statement (const float HEIGHT = 243.12) enables you to find occurrences of HEIGHT, rather than searching for 243.12. While you're changing things, use cout and cin instead of printf and scanf, and use C++'s iostream.h instead of C's stdio.h if you possibly can. Finally, use C++-style comments (//) instead of C's (/* */).

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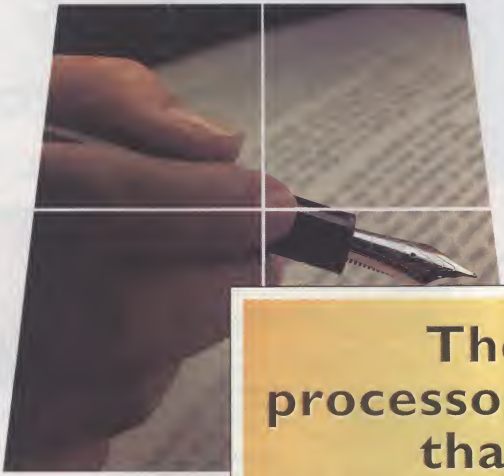

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Graphically Speaking

Quick Tips

PRESENTATION GRAPHICS

LOTUS FREELANCE GRAPHICS CHANGE OUTLINE VIEW

#738 Tired of Freelance Graphics' legal-pad look in the Outliner view? Change it to white instead. Use Windows' Notepad to open the file FLW2.INI. Locate the line White Outliner=0 and change the 0 to 1. (Note: This line may also read White Outliner= with no number following it—same difference.) Save your changes and exit Notepad. Restart Freelance Graphics and select View, Outliner to view your changes.

FREE-FLOATING LEGEND

#739 Freelance Graphics offers only preset legend positions with no option to drag a legend to the precise position you need (such as within the chart frame but above and to the left of the bars). To create a legend that you can maneuver, duplicate the chart on another presentation page, then ungroup the chart and delete everything but the legend. Group the elements of the legend and copy the group back to the page with the chart. Select the chart, choose Legend on the Chart menu, then choose Hide Legend to get rid of the original legend. You can use this technique to create free-floating chart titles, too.

BREVITY IS THE SOUL OF WIT

#740 When developing text charts, keep this simple guideline in mind: Use short words and sentences, with no more than 6 to 8 words per point, no more than 6 to 8 lines per chart, and no more than 50 words per chart. Remember that your audience can absorb only so much information at once.

PRESENTATION GRAPHICS

Time Saver: THE SHADOW KNOWS

#741 It's easy to create **drop shadows for page titles** in Lotus Freelance Graphics. Select the title, click the right-mouse button, choose Font from the pop-up menu, and select a dark color (dark gray looks good). Press Ctrl-C and Ctrl-V to **duplicate the title,** then press the left arrow key twice and the up arrow key twice. Finally, press the right-mouse button, choose Font, and select a bright color for the title.

LOTUS FREELANCE GRAPHICS EMBED A GRAPH

#742 When you have a spreadsheet graph with substantial formatting, don't use DDE to embed it into Freelance Graphics. Instead, use OLE so it will retain its original appearance. Spreadsheets that can act as OLE servers include Lotus 1-2-3 Release 4 for Windows and Microsoft Excel 4.0 and 5.0 for Windows.

To embed a 1-2-3 graph in a Freelance Graphics presentation, select Edit, Insert Object. Highlight 1-2-3 Worksheet from the dialog box and click on OK. From within 1-2-3, open the file that contains your graph and select the graph. Copy it to an untitled worksheet with Edit, Copy and Edit, Paste. Choose the File Update command to embed the graph in Freelance Graphics and stay in the worksheet. Lotus 1-2-3 Release 4 for Windows also has a special File Exit and Return to Freelance command that returns control to Freelance Graphics.

DO IT IN DOS

#743 If you need to run a Freelance Graphics screen show on a laptop that can't support Windows, run it from DOS. Export your screen show by selecting View, Screen Show, Prepare Standalone. Then specify a filename and path. For simplicity, keep the eight-letter filename and change the extension to SHW, Freelance Graphics' Screen Show file type. Click on the Options button, check Run Screen Show directly from DOS box, and click on OK twice to close each dialog box. If you're copying the show onto the DOS machine, make sure you copy SHOW.EXE from the FLW directory as well as the SHW file and all the GX2 files Freelance Graphics created for the slide show from wherever you stored them. To run the screen show, type SHOW FILENAME.SHW and press the Enter key. Note that the SHW file and all the GX2 files must be in the current DOS directory to start the screen show.

To-Do List

#744 When using **clustered bar charts** to show relative performance, make sure you don't use more than five sets of data. Comparing more sets of data will weaken the impact of the graph.

#745 Limit yourself to a maximum of six slices. Place the **most important slice in the upper right-hand quadrant,** or arrange the slices from the largest to smallest in a clockwise direction. Emphasize a particular slice by cutting it away from the pie, exploding it, or choosing a high-contrast color for it. Keep labels short and place them within the slices, and display percentage values next to each slice.

SKIP TO SCREEN SHOW

#746 To expedite a screen show, run it from an icon in Program Manager. From Program Manager, open the group where you want to store the icon. Select File, New, check Program Item, and click on OK. Type a name like "Bob's XYZ Corp. Presentation" in the Description line, and enter the following as the Command line:

```
C:\FLW\FLW.EXE /S ↵
↳C:\PRESENT\FILENAME.PRE
```

Change C:\FLW and C:\PRESENT to reflect the directories where you store Freelance Graphics and your presentations, respectively. Click on the Run Minimized box, then OK. To run the screen show, double-click on the newly created Freelance Graphics Screen Show icon.

MICROSOFT POWERPOINT 4.0 CREATING MULTIPLE OBJECTS

#747 To copy any object, hold down the Ctrl key while dragging it somewhere else on the slide. The original stays in place and the duplicate is placed wherever you release the mouse key. To create additional duplicates, choose Edit, Duplicate Again.

UNDOING ATTRIBUTE CHANGES

#748 Hate the changes you just made to the elements of a slide? Change the attributes back to their default settings by selecting Automatic on the Attribute's dialog tab.

SPC HARVARD GRAPHICS KEEP PIE CHARTS CORRECT

#749 Harvard Graphics automatically shrinks your pie charts to accommodate large or medium slice pointers that connect pie slices to pie labels. To keep your pie charts readable, reduce the size of your slice pointers or eliminate them. Press F8 to bring up the Pie Chart Options dialog box, click on the Series button, and choose either Short or None for the Slice Pointer option. Your chart will now grow, since more room has been given to it by the shortened slice pointers.

MASTER YOUR SETTINGS

#750 To override the Master Template settings for an individual slide, select Slide, Adopt Master Template and then uncheck the features you don't want copied.

HIGHLIGHT THE SWEET SPOT

#751 For emphasis, call out the section of a line, bar, or area chart that falls in a target data range, such as the "sweet spot" of a projected market. To do this, select Chart, Frame, and from the Chart Frame Options dialog box check the Show Goal Range box and specify the minimum and maximum values for the goal range. Under Select Range Colors choose a different background color to emphasize the goal range and click on OK.

AUTOMATE SLIDE SHOWS

#752 Since Harvard Graphics is both an OLE client and server, you can embed slides into any other OLE-compliant program, such as Excel 5.0 and 1-2-3 for Windows. You can make double-clicking on an embedded slide automatically run a slide show by changing Harvard Graphics' DDE/OLE settings. To do this, select Options, DDE/OLE and check Play Slides as Screenshow under the heading Harvard Graphics As a Server.

ALDUS PERSUASION PROTECT YOUR TRANSITIONS

#753 Good transitions are key to success. Know what kind of system you'll run your slide shows on *before* you run them. If there's insufficient memory, your carefully assigned transition effects won't work. If you're unsure how much memory you'll have, play it safe and design a show without complex graphics, which eat up resources. If you notice problems on your preliminary run-through before the show, close all other Windows apps and try again. If this doesn't help, you might be able to reclaim system resources that another Windows app didn't release when it closed. To do this, restart Windows without any auto-start applications (hold down the Shift key while Windows is loading).

ANY PRESENTATION PACKAGE COURSE CHARTING

#754 If you use overlapped area charts, make sure that the data sets with the highest values are in the back. If you use stacked area charts, the order in which you layer the data can affect the appearance of the chart and the message it conveys. When you want to emphasize a particular set of

Quick Tips

PRESENTATION GRAPHICS

MICROSOFT POWERPOINT 4.0 QUICK DUPLICATE LAYOUTS

#755 To quickly add another slide with the same layout as your current slide to your presentation, hold down Shift while clicking on the New Slide button. PowerPoint generates the new slide based on the current slide's layout.

MOVING SLIDES

#756 Move slides between two presentations by selecting View, Slide Sorter for each, then dragging individual slides between the presentations.

SPC HARVARD GRAPHICS LINE CHARTS

#757 To ensure that your line charts convey their information effectively, make trend lines thicker than axes and make axes thicker than grid lines.

Speed Boost: CLIP SYMBOLS

#758 To avoid the myriad steps required to incorporate Lotus **SmartPics clip art into a Freelance Graphics presentation,** make the clip art part of your Freelance symbol library. Copy the SmartPics file into the \FLW\MASTERS subdirectory, and rename the SY1 file extension to SYM. SmartPics and Freelance Graphics symbols have the same format. Moving the file and changing the file extension places SmartPics where Freelance Graphics looks for symbols.

Quick Tips

DESKTOP PUBLISHING

ALDUS PAGEMAKER FOR WINDOWS HYPHENATION

#759 When you add a word to PageMaker's dictionary, make sure you add your hyphenation preferences at the same time. Use a tilde (~) to mark your first choice for where you want PageMaker to break the word, and two or three tildes to mark progressively less favored places. Last but not least, to ensure that PageMaker won't hyphenate a word you just added, precede it with a tilde.

SHIFTING SHAPES

#760 Shift-click on a corner handle of a selected PageMaker rectangle to change it to a square. Shift-click on a corner handle of a selected oval to change it to a circle. To draw a perfectly straight horizontal, vertical, or 45-degree line, hold down the Shift key as you draw.

BOXING YOUR TEXT

#761 Create a box around your text with the Tables feature. Create a single-cell table format with rules on the top, bottom, left, and right, and it will automatically grow, or shrink, as you write and edit your boxed text.

HOLDING ON TO TOOLS

#762 To retain a tool from the graphics toolbox, either double-click on the tool when selecting it or Shift-click on it.

COLORFAST

#763 To retain a color as you work, Shift-click on the color after you select it from the Color pop-up menu.

SMART QUOTES

#764 Here are the keyboard shortcuts to produce smart quotes in a PageMaker document: Ctrl-[is ', Ctrl-] is ', Ctrl-Shift-[is ", and Ctrl-Shift-] is ".

ANOTHER QUOTES TRICK

#765 If you don't want PageMaker to convert straight quotes to smart, select File, Preferences, Other and uncheck Use Typographer Quotes.

data, place it at the bottom, where it will be most prominent and its size easier to judge because of the flat baseline.

CHART CLARITY

#766 Use emphatic headings that summarize the data in your chart, and take care that your headings don't contradict your data. The information you want to present should be shown on the axes, which in turn should be appropriately scaled for your data. Round numbers up and down to a maximum of two decimal places.

DESKTOP PUBLISHING

ALDUS PAGEMAKER FOR WINDOWS SETTING UP THE PAGE #1

#767 When setting up a document, remember that page size equals the dimensions of your publication—not the dimensions of the paper you'll use for printing. Page size does not have to match paper size. To work on a double-sided publication, select File, Page Setup and choose Facing pages.

SETTING UP THE PAGE #2

#768 If you know approximately how many pages your publication will be, specify the number by selecting File, New and placing the number under # of Pages. You can change the page setup at any time, but remember that you may have to reposition existing text or graphics. Also, some printers can't print all the way to the edge of a page, so make sure the image area defined by the margins fits within the print area of your printer and paper size.

STANDARD DESIGN

#769 Always design your master pages first. Include any text, graphics, and nonprinting guides you want repeated from page to page. Create a page number marker on a master page if you plan to number every page in your publication. Save your work. To begin work on an issue, simply open a copy of the dummy publication.

REVERSED HEADINGS

#770 Use the Table feature to create reversed headings. Create a table format with one column and one row, but no heading or footing rows. In the table designer, apply a fill pattern and a desired color. Inside the single cell, apply a paragraph style to the cell with white or light-colored text. Make the reversed heading fit the width of the text by using the keyboard shortcut !tw to automatically resize the table cell to fit.

GREEKING TEXT

#771 To speed the display of text on your screen, PageMaker displays *greeked*, or simulated, text instead of actual text when the type size is less than 9 pixels tall. You can change the number of pixels at which PageMaker greeks text by selecting File, Preferences, Other and changing the Greek Text Below *n* pixels value.

COLOR GUIDES

#772 If your system includes a Windows-compatible graphics adapter, you can display margin, ruler, and column guides in color on the layout grid. To do this, change the Color= line in the WIN.INI file from 0 (off) or no to 1 (on) or yes. While you're at it, under the Color= line are four settings: Margin Guide RGB=, Ruler Guide RGB=, Column Guide RGB=, and Floor RGB=. After each setting are three slots—r, g, b—where you specify the amount of red, green, and blue, respectively, that you want displayed for the corresponding setting.

QUARKXPRESS FOR WINDOWS INDEXING DOCUMENTS

#773 QuarkXPress lacks an automatic index feature, but you can use the following workaround with any word processor that has one (such as Word for Windows): From your QuarkXPress document, highlight all your text and select File, Save As. Choose the format of your word processor and click on OK. Pull the saved text into your word processor and insert hard page breaks to match the pages of your QuarkXPress document so that the word processor's index will correspond to the other document's page numbers. Tag the index entries, create the index, and save it as a text file. From QuarkXPress, select File, Get Text to import the document and presto, instant index.

HIDDEN SCREENS

#774 Check out an unentertaining but practical hidden screen in QuarkXPress and PageMaker. In both, if you hold down Ctrl when you select Help, About, you'll get a system report. In QuarkXPress, it offers information about your environment, including keyboard type, display drivers, and so on. In PageMaker, it details all of your installed drivers.

To-Do List

#775 Here's a quick way to **get at your preferences** when you have to share a QuarkXPress workstation with other people: In Windows' File Manager, copy the file XPRESS.PRF in the QuarkXPress directory to a file called DEFAULT.PRF. Start QuarkXPress, make changes to your tracking and kerning tables, and add any special items to your hyphenation exceptions. Exit QuarkXPress and return to File Manager. Copy XPRESS.PRF to MY.PRF, and copy DEFAULT.PRF back to XPRESS.PRF. Now all you have to do to get your setup is **swap these configurations** before you start and after you finish working in QuarkXPress.

SAVE COLOR PLATES

#776 When you use QuarkXPress to make color separations for a document that has only one color in addition to black and white (called a spot-color job) and contains art from sources such as Adobe Illustrator or CorelDraw, you may see blank cyan, magenta, and yellow plates print in addition to the spot-color plates. The useless plates print if the original art has unused custom colors. Keep the blank plates from printing by opening the original art in its native application and deleting all unused custom colors from the color palette. Save the art file, then open the QuarkXPress document and update the modified art with the Update Pictures command.

PERFECT PANTONES

#777 Since only the name of the color is really important when doing Pantone spot-color separations, feel free to change a Pantone color's spec so that it looks better onscreen or on a color printer. Under Edit, Colors, select the Pantone color you want to adjust and click on Edit. In the dialog box, change the Model drop-down list selection from Pantone to HSB, RGB, or CMYK. These color models will let you adjust the color balance. When printing spot-color separations, the adjusted Pantone color will still come out as it should.

MASTER PAGE COPIES

#778 Master pages hold important configuration information that can take hours to set up. If you find re-creating master pages for new documents too time-consuming, copy a master page from one document to another. To do this, create two new documents. Reduce the documents to Thumbnail views by selecting View, Thumbnail for each. Now drag a page from the first document across to the second. In the second document, delete the copied page by selecting Page, Delete and typing the number of the copied page. The master page settings stay in the second document.

WORD COUNT

#779 QuarkXPress doesn't include a distinct word count feature. Instead, run a spell check to count words.

MICROSOFT PUBLISHER 2.0 OPEN MULTIPLE DOCUMENTS

#780 Publisher is not a multiple-document-interface–compliant application; you can open only one document at a time. That makes cutting and pasting between documents tedious. The solution: Open multiple instances of Publisher with different documents in each.

FRAME TECHNOLOGY FRAMEMAKER 4.0 IN-LINE EQUATIONS

#781 FrameMaker has some of the best support for math in the business. It enables you to create three types of equations: *in-line* equations, which appear in running text; *display* equations, which appear in special offset boxes; and equations in frames with other objects. To create an in-line

Time Saver: MICROSOFT PUBLISHER

REPETITIVE TASK		SHORTCUT
#782	Undo	ALT-BACKSPACE
#783	Center alignment	CTRL-E
#784	Justified alignment	CTRL-J
#785	Left alignment	CTRL-L
#786	Right alignment	CTRL-R
#787	Single spacing	CTRL-1
#788	Double spacing	CTRL-2
#789	Hyphenate	CTRL-H
#790	Hide rulers/show rulers	CTRL-K

Quick Tips

DESKTOP PUBLISHING

MICROSOFT PUBLISHER 2.0 REGULAR SHAPES

#791 If you want a perfect circle or square, or vertical or horizontal line, just hold down the Shift key as you use the regular drawing tools. Publisher will make the shape perfect.

ADDING ITEMS TO A GROUP

#792 When you want to add another item to items you've already grouped, hold down the Ctrl key as you click on it. You can also remove an item from a group in the same manner.

ZA-ZA-ZA-ZOOM!

#793 Raising and lowering your zoom factor is as easy as hitting the F9 key

PAGEWIZARDS

#794 PageWizards assume that you will print the document you're creating on the default printer. If you create a document and switch to a different printer, the document may not print correctly. So before you use PageWizards, run Windows' Control Panel and double-click on the Printers icon. Select the printer you're eventually going to print on, then go back to Publisher and create your document.

FRAME TECHNOLOGY FRAMEMAKER 5.0 SOME KEYBOARD SHORTCUTS

#795 FrameMaker makes nonstandard use of the keyboard for its shortcuts. Following are a few of the less commonly known but still indispensable keyboard shortcuts you should be aware of. First, you can go to the top of the page quickly with !P.

SELECT ROW

#796 To select entire row, type !Thr.

SELECT COLUMN

#797 To select entire column, type !thc.

ZOOM TO FULL

#798 To zoom to 100 percent, type !zz.

Quick Tips

DESKTOP PUBLISHING

FRAME TECHNOLOGY FRAMEMAKER 5.0 FIT TO PAGE

#799 To fit window to page, type !zw.

PAGE FITTING

#800 To fit page to window, type !zp.

ZOOM LENS

#801 To zoom in, type !zi.

UNZOOM LENS

#802 To zoom out, type !zo.

PAINTING & DRAWING

CORELDRAW 3 PIECES AND PARTS

#803 If you need to crop an element out of an existing graphic and paste it into another graphic, you can use CorelDraw's Arrange Ungroup option to take the original graphic apart. This makes individual elements within it accessible. Simply delete everything but the element you need and copy it where necessary.

CORELDRAW 4 TEXT TRANSPORTATION

#804 If you need to move a CorelDraw document that contains text to another PC, you may run into trouble. That's because a CorelDraw document that contains text treats the text as fonts, not as a drawing. If you move it to another PC that doesn't have these fonts, CorelDraw will not display the text properly—it can't handle Windows font substitutions. To get around this, transform your text into a drawing: Select the block of text with the Pick tool and press Ctrl-V, which invokes the Convert to Curves function. This turns the text and all its font information into a drawing. You can't edit the text as text, but it retains its appearance.

PERFECT SQUARE

#805 Hold down the Ctrl key when you're drawing a rectangle and it will come out as a perfect square. Do the same thing with ellipses and they become perfect circles.

equation, click in the text where you want it, click on the Equations button, then select New Equation from the Equations palette. Then just type in the math you want in the equation. The frame you created won't be the right size, so choose Shrink-Wrap Equation from the Equations pop-up menu. What? You read that in the manual? Well, you may be interested in this: You can size the frame more exactly by inserting spaces (with the space bar) on either side of it. If the equation is too tall for the line, call up the Line Spacing menu from the formatting bar and turn off fixed line spacing. Bet you didn't know *that* trick.

PAINTING & DRAWING

CORELDRAW 4 MOVING TEXT

#806 Turn off Snap to Grid before you move text with the Shape tool. Otherwise, the text will jump around the screen as it moves from grid click to grid click.

NUDGE, NUDGE

#807 CorelDraw makes it easy to move selected objects in precise increments by using the arrow keys on your numeric keypad (not the ones on your keyboard).

Time Saver: FRAMEMAKER

REPETITIVE TASK		SHORTCUT
#808	Apply the last paragraph format used	!jj
#809	Apply the last character format used	!cc
#810	Connect the two selected text columns	!CC
#811	Highlight character	!hc OR SHIFT-→
#812	Highlight word	!hw OR CTRL-→
#813	Highlight line	!hl OR SHIFT-END
#814	Highlight sentence	!hs OR CTRL-SHIFT-END
#815	Highlight paragraph	!hp OR CTRL-SHIFT-↓
#816	Select all	!ea OR CTRL-A
#817	New document	!fn OR CTRL-N
#818	Open document	!fo OR CTRL-O
#819	Close document	!fc OR CTRL-W
#820	Print document	!fp OR CTRL-P
#821	Save document	!fs OR CTRL-S
#822	Save As	!fa
#823	Center justify (including graphics)	!jc
#824	Left justify (including graphics)	!jl
#825	Right justify (including graphics)	!jr
#826	Fully justify	!jf
#827	Turn off hyphenation	!jh
#828	Turn on hyphenation	!jn
#829	Go to the top of page	!jP
#830	Go to the top of column	!jC
#831	Go to the top of left page	!jL
#832	Go to the top of right page	!jR
#833	Go to the end of paragraph	CTRL-↓
#834	Align tops (including graphics)	!jt OR CTRL-F1
#835	Align middles (including graphics)	!jm OR CTRL-F2
#836	Align bottoms (including graphics)	!jb OR CTRL-F3

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Circle 112 on reader service card.

Quick Tips

PAINTING & DRAWING

CORELDRAW 4 RESIZING EXACTLY

#837 If you want to double the size of an imported bitmap object and preserve its pixel size, select it with the Pick tool and hold down the Ctrl key as you stretch it. The object will jump to twice its original size. If you continue to stretch it, it will grow to three times its original size, then four times its original size, and so on.

VIRTUS WALKTHROUGH FOR WINDOWS VERSION 1.2 MODELING AGENCY

#838 Model in 800-by-600-pixel, 256-color mode, but walk around models in 640-by-480-pixel, 256-color mode. Higher resolutions are better for creating models but take longer to calculate, thus slowing down rendering speed when previewing.

Tap the up, down, left, and right keys to move an object an almost immeasurable amount. This is called *nudging* an object.

BLENDED, NOT STIRRED

#839 To quickly open Blend Roll-Up from the Effects menu, just type Ctrl-B.

WILL IT PRINT?

#840 CorelDraw makes it easy to create incredibly complex pictures—too complex, sometimes, for printing on high-resolution printers. Here's a quick test you can run on a regular 300-dpi PostScript printer to see if your file will exceed the capabilities of a high-resolution printer. First, select File, Print, Options. At the top of this dialog box is a field called Set Flatness To. Set the flatness to 0.20 (the default is 1.00), click on OK, then click on OK again. This setting will increase the complexity of the picture by increasing the number of segments the printer will use to draw curves. If it doesn't print on your 300-dpi printer with this setting, there's a good chance that it won't print on a 1,270-dpi printer, either.

VIRTUS WALKTHROUGH FOR WINDOWS VERSION 1.2 PLANNING AHEAD

#841 Think about how you're going to design something. The more objects you use to create a model, the more overhead is required (RAM and processor). There are usually several ways something can be built.

RUNNING ALONE

#842 Before you fire up WalkThrough, turn off all the TSRs and applications that you can. The more processor time that's available to WalkThrough, the better.

FASTER RESPONSE

#843 For the snappiest response to your actions, work in Faster mode. Use Normal mode only when viewing your model.

ADOBE PHOTOSHOP THE PALETTIZER

#844 Here's a neat trick for customizing your color palette. Convert a photo to Indexed Color using the Mode menu, then choose Color Table from the same

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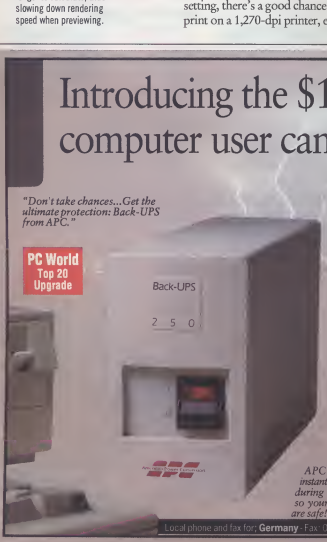

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PC MAGAZINE EDITORS' CHOICE
November 23, 1993
QMS 860 Print System

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Quick Tips

PAINTING & DRAWING

ADDBE ILLUSTRATOR THE FASTEST DRAW

#845 Try not to work in preview mode in Illustrator—although you'll be seeing images closer to how they'll appear in print, it's slower than the artwork-only mode. That's because when you select an object in preview mode, Illustrator must redraw the entire page.

LOCK DOWN

#846 When Illustrator is first installed, its default is to have a floating toolbox. To speed redraw, lock the toolbox to the left, right, or top of the page. Now it doesn't complicate the image.

FONT SPEED AHEAD

#847 When installing PostScript Type 1 fonts, keep in mind that the more fonts you add to your system, the longer Illustrator will take to open and close.

menu to save the colors. Now choose Load Colors from the Colors palette pop-up menu and select the table you just saved. The Colors palette will display all the colors from that photo as selectable swatches. This is a great thing to do before you start editing a photo.

PAINTBRUSH OPACITY

#848 Want to create a semi-opaque paintbrush? Select the Paintbrush tool and press any number from zero to nine. Zero sets the opacity to 100 percent, 9 to 90 percent, 8 to 80 percent, and so on.

HOW FAR APART?

#849 Have you ever wanted to measure the distance between two points in an image? Here's a hidden way that uses the line tool. Display the Info palette by choosing Show Info from the Window menu. Now double-click on the line tool and set the line width to 0. Click and drag the line tool from point to point on the image that you want to measure. The Info palette will display the precise distance and angle of the line. When you release the mouse button you won't get a line because you entered 0 for line width.

ADOBE ILLUSTRATOR LAYER BY LAYER

#850 Adobe Illustrator supports an infinite number of layers, and that's great. The problem is that you can't define these layers individually to move them around easily. If layered artwork gets confusing, hide it. Select the object using the Selection tool, then use the Hide Artwork command. When you're finished, use the Show All command to see what you've done.

MICROGRAFX PICTURE PUBLISHER SEE IN THREE DIMENSIONS

#851 Break out your red-and-blue glasses and prepare to see 3-D. First, if your image is a grayscale, convert it to RGB color. Next, select Image, Effects, Prism. Shift the red channel to -3 and the green channel to 3; don't adjust the blue channel. Click on OK to apply the effect. Finally, give the image a gray or white border to make it stand out.

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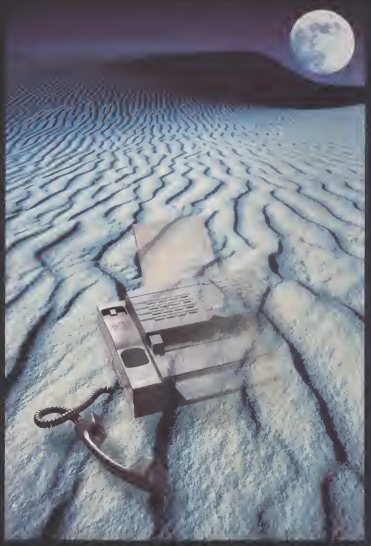

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Now the message has a medium.

Circle 146 on reader service card.

Getting It Together

Quick Tips

PIMs

LOTUS ORGANIZER ONE AND MANY

#852 Using the Type feature in Organizer's Address records is a useful way to sort data. But what if you want to assign a person to more than one category and still be able to find his or her data in a sort? Use the Notes field to type the category names and separate each with a space and an @ symbol. For example, if someone in your address book is a consultant, writer, and instructor, you could enter @CONSULTANT @WRITER @INSTRUCTOR.

MULTIPLE RECORDS

#853 Organizer's Last Page Looked At icon toggles between only two items in a section, not the three or four that you sometimes have to cross-check. To flip among several items, use the Search dialog box as your switcher. Select Edit, Search to find each item, and they will remain in the Search dialog box. To quickly move to one, just click on the Search icon, click on the item name in the Search dialog box, and click on the Turn To button. The items will remain in the Search dialog box until you click on the Clear button.

UNINSTALL ORGANIZER

#854 Many poorly behaved Windows programs leave trails of files and settings all over your system after you delete them. Organizer, on the other hand, comes with its own uninstall program that removes all traces of its existence from your hard drive. Exit Organizer, select File Run from Program Manager, select Browse to find the file UNINSTAL.EXE in Organizer's installation directory, choose OK, and follow the screen prompts to remove Organizer.

PIMs

Time Saver: CALENDARS AND COMPLETION

#855 To make Lotus Organizer **consolidate personal and departmental appointments,** save the departmental calendar on a network drive and select File, Include to add that calendar to yours. Select Options, Calendar, Show and choose Calendar1 (the included calendar) to merge them. **#856** To **mark tasks completed** on the day you finish them, click on each, select Completed, and select the date from the pop-up calendar.

LOTUS ORGANIZER INTERACTIVE TUTORIAL

#857 Organizer's hypertext-like DDE links make it easy to generate interactive tutorials and presentations. First, open Organizer's Notepad section and create a new page with the Chapter option selected to set up the topic in the Contents section. Make the chapter subtopics by creating new pages, which Organizer will place under the new chapter. If you've already generated the text of the presentation or tutorial, select File in the From list and use Browse to select the appropriate file.

After you've entered your topics, click on the Anchor button and select the first topic. Move down to the destination topic and click again. To connect a topic to several destinations, click on the Anchor button, hold down the Ctrl key, and click on each destination topic. Check your work by clicking on the Hand button and opening the Notepad Contents page. Select the first topic and you'll see an Anchor chain next to the title. Click on it and a drop-down list of destination topics will appear. Select a topic and Organizer will zoom you to it.

BETTER COMMUNICATIONS LOG

#858 The problem with Organizer's phone log (OK, *one* of the most troublesome problems) is that it won't list calls by person. Want to review all your notes from talking with a particular client? You're out of luck. Here's a quick fix: Select Options, Customize to add a new section that will be based on the Notepad feature. Call it Comm Rec (for Communications Record), and click on OK.

Add a page in Comm Rec for each person or company that you call on a regular basis. To select an individual's page, click on the anchor-shaped Link button on the toolbar, click on the Address tab, then click on the person's address information. Once you've dialed the number, click on the link icon by the address and Organizer will take you

To-Do List

#859 If you keep all of your contacts in a **Microsoft Excel table** and want to start using Lotus Organizer, save the Excel file as a CSV using File, Save As and import the data into Organizer through File, Import.
#860 When you complete a to-do task, Organizer crosses it out, but it remains on the page of the completion day. If you want to **remove completed tasks** from a crowded page, just drag them to the trash can.
#861 Make sure you keep a **backup copy** of your Organizer schedule and particularly of your address book. There's nothing worse than coming in to work one day and finding that you can't call anyone.

straight to the Comm Rec page so you can enter notes for that person. It's a simple workaround to an irksome problem.

POLARIS SOFTWARE PACKRAT LAUNCH APPLICATIONS

#862 Create an applications management facility to launch programs from within PackRat. Open the Disk File Management tool by clicking on its icon, then select Options, Create Overlay and name the overlay Applications. Type in key fields that correspond to the types of programs you'll be setting up, then click on the check box to make this overlay your default. Click on OK to close the dialog box, then click on the Disk File Management icon—your new overlay will appear.

To create an entry for a program, click on the Browse tool to get the complete list of your applications, then select a program file from the list. Enter a summary field and click on OK. Repeat the process for each application you want to set up. To run the program, highlight the entry and click on the Launch icon.

STORING DIRECTORY INFORMATION

#863 PackRat's Disk File facility lets you store the names and directory information of files you've created. You can also enter information such as identifying keywords and free-form notes. Once you've searched and found the file you want, you can launch the application and load the file by clicking on the launch icon in the icon bar or by pressing Shift-Enter. If this doesn't work the first time, open WIN.INI, go to the [EXTENSIONS] section, and link your applications with their data-file extensions using the other lines as a model.

SYMANTEC ACT PHONE HOME FAST

#864 Don't want to scroll through an ACT database to get a phone number? Put the number on your Quick List—a useful tool. Select Phone, Quick List, Modify Quick List and click on Add from the Modify Quick List dialog box. Select the name you want to add to the Quick List menu with the person's contact number. Select the radio button for Local, Long Distance, or International calling and click on OK.

NETWORKING

NOVELL NETWARE 3.X DON'T WANT TO BE BOTHERED

#865 It's important that you not press any key while downloading a file from an online service. A broadcast message can disrupt transmission because it prompts you to clear the message, which stops communications. As a safeguard, type CASTOFF from any DOS prompt (or

EDITOR'S TIP

THE POWERS THAT BE

#866 Make the world of computing totally bug-free, utterly responsive to your needs, and unencumbered by outdated technology policy that was already carved in stone when Fred Flintstone practiced his version of tablet computing. Or at least give it a try. Here are some e-mail addresses to help you direct your input to the right people.
Bill Gates, Microsoft:
billg@microsoft.com
Philippe Kahn, Borland:
227-2940@mcimail.com
Electronic Frontier Foundation (security and privacy issues):
ftphelp@eff.com
And while you're at it,
Bill Clinton: president@whitehouse.gov

JON ZILBER
EDITOR-IN-CHIEF

PHOTOGRAPH BY STEVEN BARATZ

Quick Tips

PIMs

POLARIS SOFTWARE PACKRAT SUMMARY LINE ORDER

#867 PackRat's default phone list may not match the way you work, but you can customize it to find numbers more easily. For example, to replace the Company field with Nickname in the summary view, select the Phone Book facility and choose Summary Line Order from the View menu. Click on the drop arrow for the box labeled Second and select Nickname from the drop-down list. Click on OK and your view will be updated. To make this change permanent, select File, Preferences and click on the Facilities button in the Preferences dialog box. Select the Phone Book facility and make the same change in the Summary Line Order box. Click on OK to save your change. You're done—just quit and relaunch PackRat for the changes to take effect.

NETWORKING

NOVELL NETWARE 3.X OPTIMAL NETWARE #1

#868 To optimize a Novell NetWare server to handle the specific demands of databases, try increasing the cache block size on the database server. NetWare 3.x and 4.x default to a 4K buffer size, but this may be increased to 8K or 16K to handle large data requests.

OPTIMAL NETWARE #2

#869 If the tip above doesn't help, try removing DOS from the server to increase the available cache. Use the REMOVE DOS console command to do this. When you type EXIT to stop SERVER.EXE, you'll reboot the system, so be careful how you use this trick

OPTIMAL NETWARE #3

#870 If all else fails, you will probably have to resort to dedicating one (or more) servers to database work exclusively. Unlike file servers, which aren't particular about how fast your CPU is, databases like the fastest CPU you can get.

Quick Tips

NETWORKING

NOVELL NETWARE 4.X DETECT VLMS ON LOG IN

#871 To keep the NetWare DOS client software up-to-date, it's useful to detect in the system log-in script whether a given workstation is loading the old NETX shell or the new NetWare DOS Requester. Here's an example of lines you can add to the system log-in script to do this:

```
IF SHELL_TYPE<"V4.00"
THEN BEGIN
FIRE PHASERS
WRITE "You need to update ↵
↵your NetWare client software."
WRITE "Contact your network ↵
↵administrator"
PAUSE
END
```

E-MAIL LITE

#872 To send a brief message to a fellow LAN user, type SEND "message" USERID—for example, SEND "Where's the memo?" BGATES (if you dare). Limit the message to 40 characters. You can also do it from Windows by selecting File, Run and typing the same command. Better yet, if you're running Windows and have the latest version of the client software, run the NWUSER utility and use the graphical version of the SEND command.

COMMUNICATIONS

COMPUSERVE WINCIM FILE CABINET IS OVERFLOWING

#873 Save your incoming and outgoing e-mail in properly named folders. When you select File It from the view screen, you're prompted for a folder name. Don't settle for Auto Saved, because then you'll end up with hundreds of unrelated documents. Instead, select New and give the new folder an appropriate name. In the future, add related messages to the same folder.

CARBON COPY WORKING WITH GROUPS

#874 Minimize the number of open groups to only those you need to access. That way, Carbon Copy for Windows doesn't need to transmit superfluous information (such as the pictures and names in those groups).

Windows' File Run) before you start to download. To regain those wonderful broadcasting services, type CASTON.

MAPPING DRIVES

#875 MAP is a shortcut for navigating the file server's directory structure. Rather than typing CD\APPS\UTILS\NORTON, you can assign a letter like *N* to that subdirectory. For example:

```
MAP N:=SERVER\PROGRAMS:↵
↵\APPS\UTILS\NORTON
```

Our example assumes that your server is called SERVER and the volume is called PROGRAMS. To remove that map reference, all you need to do is type:

```
MAP DEL N:
```

If you don't know the name of your server, type WHOAMI and you'll see it. To see the volume label, go to that drive (for example, F:) and type DIR/P.

NOVELL NETWARE 4.X SET UP GLOBAL PRINTING

#876 To create a global print setup in NetWare 4.0, run NWADMIN and select the container object (O= or OU=) in which you will place the print job configuration. This print configuration database will be globally available to any object in the container. Define the print job configuration for the database, and anyone can use that configuration by specifying it in a CAPTURE statement.

FROM NETWARE 3.X TO NETWARE 4.X

#877 Here's a handy checklist for migrating to NetWare 4.*x*:

- Clean up the file system.
- Perform a full system backup.
- Verify the backup by restoring selected files from tape. This step is a must.
- Clean up the server's bindery by deleting obsolete bindery objects, checking for duplicate object names, making user log-in names consistent, and running the BINDFIX utility that comes with NetWare.
- If you combine several servers into one, check for users who have accounts on more than one of these servers.
- Make a backup copy of the *.NCF files on the NetWare 3.*x* server.

The last step is for across-the-wire migration using NetWare's migration utility:

- Clean the destination server's bindery context of unneeded objects.

COMMUNICATIONS

COMPUSERVE WINCIM STREAMLINED INTERFACE

#878 If all you do on CompuServe is read and send e-mail, highlight the WinCIM icon in the Program Manager, select File, Properties, and type GO MAIL in the Command Line box. GO is a filename, so be sure you include its complete path—for example, C:\CSERVE\WINCIM\GO MAIL. (Note: There must be a space before MAIL.) When you launch WinCIM, you'll be in mail automatically.

WINFAX PRO 3.0 CUSTOM COVER PAGE

#879 To create your own cover page or fax sheet, the easiest thing to do is start with an existing design and modify it. Select the Cover Page Library button (CvPbLib), click on one thumbnail, and select Edit. In the design mode, click once on the text banner at the top (the one that says Fax Cover Page or something similar), select the text insertion icon (the one that looks like a capital *L*), and change the text, font, and size. Click on the graphic, delete it, select

Time Saver: OOPS, FORGOT TO LEAVE MY SYSTEM ON

#880 If you turn your computer off before you go home and then need to call in, you're out of luck. **Remote Power On/Off + Aux** by Server Technology hooks up between the wall jack and your modem, and turns your system on when you dial in. It can save you at least its $169 price tag each year in electric bills if you currently leave your system on all the time. Contact Server Technology at (800) 835-1515. *Circle Reader Service No. 680*

To-Do List

#881 CompuServe's WinCIM is a great front end, but its real power lies in the offline activities you can perform with it, all of which **save connect-time fees.** For example, rather than reading your incoming messages online, click on Get All, and as soon as the messages have been received, disconnect.

#882 Don't send replies as you write them. Open the In Basket, read the messages one by one, and prepare replies—but don't send them, put them in the Out Basket for now. When you're done writing replies, click on the Out Basket icon and click on **Send All.** The program will then dial in and send the replies.

Object, Select to browse for other graphics, and insert your own graphic, such as your company logo. Scroll down the vertical scroll bar, find and delete the WinFax credit box (you designed this page), select File, Save, then exit and select Set Default.

SYMANTEC CENTRAL POINT COMMUTE AUTOMATE THE DIAL-IN PROCESS

#883 If you've set up several host sites in the Call and Take Control dialog box, you can speed up the dial-in process by writing a batch file for each site. If your list includes Office, Denver, and Chicago, you can write a batch file called OFFICE.BAT that includes the following lines:

```
@ECHO OFF
COMMUTE OFFICE
```

Repeat the process for each site. The advantage of this method is that you don't have to go through the Commute menus. Just type OFFICE at the DOS prompt, and it will dial the right number.

E-MAIL/SCHEDULING

LOTUS CC:MAIL COLORFUL COMMENTS

#884 If you want to reply to a message and add your own comments, use cc:Mail's color annotations instead of the more traditional method of calling out the original message with a special character. In cc:Mail for Windows, press the right-mouse button while the cursor is in a message and you'll see a color palette. Select the color you want and you're ready. For the DOS version, press Alt-F1 to see the color choices. Select a color using the arrow keys, and press Enter.

CUT AND PASTE

#885 Users sometimes forget that they can use cut and paste from the keyboard. It's possible to cut and paste an address from a recipient who is not in the post office and put it in the post office listing on the mail directory. For example, upon receipt of a message from someone not in the mail directory, copy it to the clipboard, prepare a new message, select the correct post office for this person, hit Alt-F, then P to paste the new address in the Address Dialog Field, and select Add to List. Remember to remove AT <PONAME> if it's not pertinent.

SHIP'S LOG, STARDATE . . .

#886 Track every message you send with cc:Mail's Message Log. In cc:Mail for Windows Release 2.0 and later, it's automatically created for you, but with earlier versions you have to click on the Folders icon and select File, Create Folder; type MESSAGE LOG and select Create, Done. For cc:Mail for DOS Release 4.0, use the Create Message Log command under the Manage Mailbox menu. For DOS versions before 4.0, select Manage Mailbox from the main menu, then Manage Folders, and type MESSAGE LOG. Press Enter, then press Esc twice. To keep this folder from filling too quickly, go through it once a week and delete what you don't need.

WORDPERFECT OFFICE WHEN YOU NEED TO EAT YOUR WORDS

#887 Ever said something you wanted to take back? In WordPerfect Office mail, you can—at least if the recipient hasn't read it yet. Open your Out Box and highlight the message you want to unsend. Choose Del

Quick Tips

E-MAIL/SCHEDULING

E-MAIL ETIQUETTE NEED TO KNOW

#889 Does everyone in the company really need your latest bit of information, or are you just covering your hindquarters? This is particularly a problem when you reply to the message congratulating Joe on his promotion—nobody cares that you think Joe's doing a great job except Joe and his boss.

STOP YELLING AT ME

#890 DON'T USE CAPITAL LETTERS—they're the e-mail equivalent of yelling.

AVOID SARCASM

#891 Sending someone a message like, "Oh, you did a really terrible job on the Smith report," when you really mean they did well is poor practice. Sarcasm usually doesn't travel well without a voice behind it.

USE EMOTICONS

#892 You've probably seen emoticons all over the place. The most common is the smiley face :-) you use to show that you're joking, but there are thousands of others.

SPELL CHEK

#893 No one likes to receive e-mail with spelling errors. Before you send a message, run it through your e-mail program's spelling checker.

SHORT MESSAGES ARE BETTER

#894 Nobody likes to wade through five pages of a message just to see you think online. Think first, write later.

LOTUS CC:MAIL NOTIFICATION

#895 If you want to know when you have a new message in your inbox, load the Notify program. Choose File, Options, Notify. Select Autoload Notify (this will load automatic notification every time you run cc:Mail for Windows), then select Tone if it's not already selected. By default, cc:Mail will check for mail every five minutes.

Time Saver: REMAIL IN WORDPERFECT OFFICE

#888 If you regularly send the same message—for example, a note to schedule a meeting or a reminder to section heads to turn in time cards for their employees—you can **save your fingers a bit of work** by not retyping it each time. All you have to do is open your Out Box, highlight the message you want to resend, then choose Read and Resend. You'll be able to edit the message, then just press F9 and it's sent.

Quick Tips

E-MAIL/SCHEDULING

MICROSOFT SCHEDULE+ COPY AND PASTE INVITATIONS

#896 The Schedule+ Invitation dialog box doesn't let you to get to any of the main menus, so you can't pull down Edit to get at Copy and Paste. But that's OK. Use the standard Ctrl-C and Ctrl-V combinations for Copy and Paste, respectively. Ctrl-X works for Cut as well.

COLOR ME CONFUSED

#897 Change the default light gray background in the Planner section if you don't like it. Use SysEdit or another editor to open SCHDPLUS.INI in your Windows directory. Locate the line PlannerColor= and change its value: 4 is a nice dark blue; 1 is a dark gray.

KEEP EVERYTHING VISIBLE

#898 If you're invited to many meetings but forget to check your Messages window, make sure you see it when you launch Schedule+. Choose Window, Messages, and when it's visible select Window, Tile. This will make your schedule and invitations appear side by side. Exit Schedule+ normally, and the next time you run it you should see the same configuration. Unfortunately, when you accept an invitation that conflicts with an existing appointment, it will hide all your other invitations.

PARALLEL PORT TRANSFER LIKE A NETWORK, ONLY EASIER

#899 If you regularly use two computers and frequently transfer files between them, you don't need a network. Install Traveling Software's LapLink or use MS-DOS 6's Interlink, then run a serial or parallel cable between the two units and let it stay there permanently. If you don't have a serial or parallel port to spare, you can buy an LPT board for as little as $15, set it to LPT2, and configure the software to always use that port.

CAMPBELL SERVICES ONTIME 120 INVITATIONS A DAY

#900 In the Day Planner, OnTime can display only 120 invitations. That means if you have a very busy schedule, you can't view all your invitations at once. Delete them as you go along. (in Windows, choose Edit, Delete) and you will have two ways of retracting your message: If you choose All In Boxes, the message is removed from all recipients' In Boxes but left in your Out Box; if you choose All Mailboxes, the message is erased from all In Boxes as well as your own Out Box. Just remember that you can't retract a message after someone has read it. It's good practice to leave particularly volatile or nasty messages sitting in your Out Box for a day or two while you mull over the consequences of sending them.

BEYONOMAIL 2.0 ENCRYPTION

#901 Like most e-mail packages, BeyondMail supports individual message encryption. It also supports in-transit encryption. If you're running BeyondMail 2.0 and don't need to communicate with any other e-mail packages, get the BeyondMail administrator to edit every BMAIL.INI and add the line ENCRYPTINTRANSIT=Y. Now, when your messages reside on the server, they're encrypted.

MAIL FROM THE BOSS

#902 This one's for BeyondMail 2.0 for Windows. If you haven't done so already, create a MailMinder that notifies you when you receive mail from your boss. Pull down the MailMinders menu and select Message Clerk. Select New and, in the resulting window, click on the From button and pick your boss's name. At the "Move it to my:" prompt, type INBOX (if it's not already there). On the "Notify me by:" line, select Pop-up and click on OK. In the top-left corner of the first Message Clerk window, make sure there's a green check so the rules are turned on. Now you'll receive a pop-up notice when your boss sends you mail.

NAVIGATION

#903 Here are some quick tips for moving around in Beyond Software's BeyondMail 2.0. In the DOS version:

- Move forward one field in a form by hitting Tab instead of using the arrow keys.
- Move backward by pressing Shift-Tab.
- Use Alt or F10 to activate menus.
- Select check boxes and radio buttons with the space bar.

In the Windows version:

- Select multiple individual messages by clicking on the first, then Ctrl-clicking on the others you want to select.
- To select a range, click on the first item, then Shift-click on the last.
- To select multiple ranges, select one range as described above, then Ctrl-click on the first message in the second range and Ctrl-Shift-click on the last message.

MICROSOFT SCHEDULE+ BLOCK OUT DATES QUICKLY

#904 If you need to schedule a meeting that spans more than one day (when you're going on a business trip, for example), you can't just block out the time in the Appts view. Instead, go to the Planner view and block out the time there. Use Ctrl-N to create the appointment just as you would in the Appts view.

BE REMINDED

#905 If Schedule+ isn't reminding you of your duties, force it to. In Program Manager, open the StartUp group, select File, New Item, and type REMINDER under Description. After Command Line, type C:\SCHDPLUS\MSREMIND.EXE, and under Working Directory, type the path to your copy of Schedule+. Restart Windows, and Schedule+ will remind you of your meetings. You can even customize how far in advance it reminds you.

Speed Boost: ALL REMOTE ACCESS PRODUCTS

#906 Windows' wallpaper is a bitmap that will transfer very slowly. **Remove the wallpaper** from the host PC by selecting Main, Control Panel, Desktop. **#907** If switching back and forth between the host's DOS prompt and your own confuses you, set the prompts to **identify the systems.** At each prompt, type PROMPT OFFICE SYSTEM$_$p$g and PROMPT MY SYSTEM$_pg for Host and Local, respectively.

PHOTOGRAPHS BY STEVE HANKS

EDITOR'S TIP

PHOTOGRAPHY BY STEVEN BRADY

A SMALL WORLD AFTER ALL

#908 Anyone with a computer and modem can connect to anyone else. Here are address formats for getting from one e-mail service to another:
From the Internet to user 76000,21 on CompuServe:
76000.21@compuserve.com
From CompuServe to Fred Rogers on the Internet:
INTERNET:frogers@makebelieve.com
To mail from the Internet to user Fred Rogers with MCI #101-1001:
101-1001@mcimail.com
To get to him on America Online from the Internet: frogers@aol.com
And finally, to get from America Online to good old Fred Rogers on the Internet:
frogers@makebelieve.com

SCOTT NAYLOR
ASSOCIATE TECHNICAL EDITOR

MICROSOFT MAIL
RECREATE THE MAIL INITIALIZATION

#909 When you first run Mail, it asks whether to use an existing post office on the workgroup or to create the post office on your computer. If you accidentally select the incorrect option, you can use the following procedure to reinitialize Mail to make these options available again. First, open MSMAIL.INI in a text editor such as NOTEPAD.EXE, then disable or "comment out" the SERVERPATH= and LOGIN= entries by typing a semicolon (;) at the beginning of these lines:

```
; ServerPath=<something>
; Login=<something>
```

Edit the CustomInitHandler= entry to read as follows:

```
CustomInitHandler=WGPOMGR.DLL, 10
```

Finally, run Mail. The initialization process will begin and will once again prompt you for the location of the workgroup post office.

LOTUS NOTES
ORGANIZE MESSAGES

#910 Don't overlook Notes Categories, a powerful feature that many users are unaware of or don't exploit. Save any incoming or outgoing messages according to a specific category to make future searches more efficient. To do this, mark the messages you want to categorize as one group by clicking on the left margin next to each message. Then select Tools, Categorize. To create a new category, just type its name in the New Categories box.

QUICK NAVIGATION

#911 Moving up and down the view one page at a time with the Page Up and Page Down keys is OK, but there's a faster way. To get to the end of your messages quickly, hit Ctrl-End. Similarly, Ctrl-Home takes you to the top. Select View, Collapse All to see an outline of what's in your current view (for example, in the Category view, you'd see only category names). Now move to the outline member you want and press the Return key to expand it. There's no quick way to collapse and expand any more than this, so from here it's slow going.

Speed Boost: LAUNCH E-MAIL QUICKLY

#912 Speed your cc:Mail, Microsoft Mail, or Schedule+ startup by **eliminating the password.** In Program Manager, select the icon for your application and press Alt-Enter. After Command Line, type C:\CCMAIL\WMAIL.EXE V:\CCDATA "JOHN SMITH" |PASSWORD. **Substitute** your mail program and post office for C:\CCMAIL and V:\CCDATA. For "JOHN SMITH" and PASSWORD, substitute your user name and password.

Quick Tips

E-MAIL/SCHEDULING

MICROSOFT MAIL
REPLY WITH ORIGINAL

#913 When you reply to a message and want to comment on it, it's important to distinguish your comments from the original message. Microsoft Mail attaches a symbol to the beginning of each line of the original message. To modify that symbol, edit MSMAIL.INI in DOS Edit or any other text editor. In the [Microsoft Mail] section, enter ReplyPrefix=> on its own line, substituting any character or characters you choose for >. Save the file and restart Microsoft Mail. Now when you click on the Reply button, you'll see each line of the original message starting with > (or whatever symbol you choose).

LOTUS NOTES
WHERE'S THAT PROPOSAL?

#914 It's easy to get lost in hundreds of saved messages. Use Edit, Find to quickly locate documents containing specific words. This can also be used across multiple databases.

ON THE ROAD AGAIN

#915 Use Notes' Selective Replication to take work on the road with you. It offers the full power of Notes even when you're disconnected from your LAN.

Time Saver: QUICK SORT

#916 Microsoft Mail works like the File Manager in PC Tools for Windows, so you can sort information by selecting **column headings.** For example, select the Inbox folder and click on the column heading From. Microsoft Mail will display the messages **alphabetically** by sender. This method also works with the Subject and Received headings. For a **reverse sort,** press Ctrl when you click on a heading.

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Help Your Hardware

Quick Tips

PERIPHERALS

MODEMS
MAKE IT WAIT
#917 Does call-waiting interrupt your modem sessions? Two ways to temporarily defeat it: On a touch-tone phone, precede the number you dial with *70. Rotary phone users: Dial 1170 (this also works from a touch-tone phone).

SHHHH . . . QUIET!
#918 To turn down the volume, type ATL0 and press Enter.

INVISIBLE INK
#919 Sometimes when you first power up a modem and type an AT command, you don't see any output. Type ATE1Q0 to make sure that the modem is echoing your keystrokes properly.

EDITOR'S TIP

CD-ROM SECRET
#920 By default, MSCDEX, the CD-ROM extension, is set up to use 8 or 10 buffers. But if you have more than 4MB of RAM in your system, you can increase this to 12 or 14 to boost performance. Edit the line in your AUTOEXEC.BAT file that loads MSCDEX.EXE so that the number following the /A: switch is 12 or 14 instead of 8 or 10.

WENDY TAYLOR
SENIOR EDITOR

PERIPHERALS

Speed Boost: CD-ROM DRIVES

#921 If you have a CD-ROM drive and want to boost its performance, **upgrade to MS-DOS 6.21.** This version installs SmartDrive, which caches CDs. Make sure you load your CD-ROM driver and MSCDEX before you load SmartDrive. **#922** When you purchase a CD-ROM drive, make sure it **works with the SCSI card** you have and that it's at least a double-speed (300 kilobytes per second) model.

CD-ROM DRIVES
CLEAN THOSE CDs
#923 If you have difficulty accessing the data on a CD-ROM, remove it from the drive and check for a thumbprint on the side without the label. (If it's the Just Grandma and Me disc, check for peanut butter.) Wipe the mess in straight lines from the center out.

MODEMS
OPERATOR-ASSISTED CALLS
#924 To make an operator-assisted call, type ATO in the Terminal window but don't press Enter. Dial out using a phone connected to the same line. After talking to the operator, you will hear the connection tone from the remote modem. Press Enter to send the ATO command to your modem. The modem will pick up the line and make the connection. Note: If ATO doesn't work with your modem, use ATX1DT instead.

VIDEO
DOWNLOAD THE LATEST DRIVERS
#925 Problem with your video card? Rush to CompuServe or your video card vendor's bulletin board and download the latest drivers. Generally, video hardware is pretty stable, so when you have a problem, the Windows driver tends to be the culprit.

LASER PRINTERS
THE TYPEWRITER'S JOB
#926 Want to fill out a form that someone photocopied? Don't just run it through your laser printer—the toner on the photocopied page will stick to the printer's fuser roller (the heater that binds toner to the page). Scan the form (if you can) or use a typewriter (yuck).

SOUND CARDS
BUZZ OFF YOU BIG BUZZ
#927 If your sound card buzzes, check where it sits to see how close it is to other components in your system. Many video

PHOTOGRAPH BY DAVID PERRY

To-Do List

#928 Monitor dirty? Clean it with Windex, ammonia, or even vinegar—but **don't use alcohol.** And spray your cleanser on a rag first, then clean the monitor. Otherwise you'll remove the coating on your screen.
#929 When adding RAM to your system, make sure it runs at the same speed as the RAM already there. For example, **don't mix 70ns and 80ns** SIMMs—many systems will crash unexpectedly if you do.
#930 Remember to **keep your cables short.** If the entire SCSI chain exceeds about nine feet, you can get errors. This is a problem when you have internal and external devices: It's easy to forget about what's inside your computer.

cards produce high-frequency sounds that can interfere with a sound card's electronics and make a buzz.

CMOS
PREPARE FOR THE WORST

#931 To avoid losing your hard drive's identifying information when your CMOS battery gets low, write down the number of read/write heads, sectors, cylinders, and precomp zones on a piece of paper and tape it to the system's case.

SCANNERS
FILL IN FORMS ELECTRONICALLY

#932 Use the mark-up annotation tool in Visioneer's MaxMate to fill in scanned forms. Once the form is filled in, you can use MaxMate's communications features to distribute the form to other people via e-mail or fax software.

USE PAPERMAX WITH COM3 OR COM4

#933 You can connect Visioneer's PaperMax to COM3 or COM4 without worrying about IRQ conflicts. PaperMax and MaxMate (the bundled software) don't require an available IRQ line. To avoid possible conflicts with other Windows drivers, MaxMate's Setup routine automatically disables the opening of an IRQ line when the COM port is opened. Pretty clever, huh?

CLEAN THE UNIT

#934 After a few hundred pages, your scans may drop in quality. For best results, clean your scanner periodically. You may use standard fax machine cleaning sheets, such as those sold by ACL (800-782-8420).

SYSTEMS

A NEW A: DRIVE

#935 If you have a system with a 5.25-inch and a 3.5-inch floppy drive, chances are that the big drive is the A: drive. Drive A: is also where your system looks when it searches for a boot floppy. Now that most software comes on 3.5-inch floppies, you want to change drive names so that you can boot off a 3.5-inch floppy. Open the case and find the cable that connects the two floppy drives to the motherboard. At some point, the cable should have a twist in it. The twisted section, in the middle of the cable, is surrounded by portions of the cable that remain straight. The next device on the cable will be drive A: (usually the last device on the cable). Attach the 3.5-inch floppy drive to the connector immediately after the twist. If the connector right after the twist doesn't fit your 3.5-inch floppy, it's probably for a 5.25-inch drive, so try the next connector. Power up your machine and don't worry about warning bells—you'll need to change the CMOS settings to reflect the new drive assignments.

SYSTEM UPGRADE

#936 Many older 286 and 386 systems have old CMOS BIOSs that don't support 1.44MB, 3.5-inch floppy drives. Before you buy a new BIOS, try a program such as Diagsoft's QAPlus or TouchStone Software's CheckIt Pro. These applications can actually modify your CMOS settings to support the 1.44MB, 3.5-inch drives.

Quick Tips

SYSTEMS

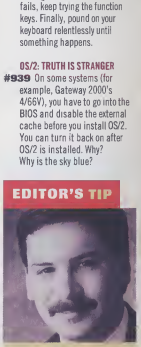
GETTING INTO CMOS

#938 When you boot most computers, they show a message such as, "To change CMOS settings, hit Esc." These messages are really handy if you need to change your BIOS. Some systems, however, don't include this message, leaving you guessing. Here are our educated guesses: First try Esc, then Del, F1, and F2. After that, try Ctrl-Alt-S and Ctrl-Alt-Esc. If all else fails, keep trying the function keys. Finally, pound on your keyboard relentlessly until something happens.

OS/2: TRUTH IS STRANGER

#939 On some systems (for example, Gateway 2000's 4/66V), you have to go into the BIOS and disable the external cache before you install OS/2. You can turn it back on after OS/2 is installed. Why? Why is the sky blue?

EDITOR'S TIP



SAVE NOTEBOOK JUICE

#940 Nothing's more annoying than running out of battery power on a long flight, leaving you nothing to do but watch Rambo XXVI. To conserve battery power, you should remove PCMCIA cards when you're not using them. Or if the computer has a utility to do so, turn off the power to the socket. Even when you're not actively using a card, it does draw a small amount of current.

RAPHAEL NEEDLEMAN
REVIEWS EDITOR

Time Saver: PRINTING ENVELOPES

#937 Never put an open envelope into your laser printer—it can really gum things up. If you find that your envelopes stick shut when you're printing them in humid weather, gather them into batches of about ten, and **cook them in the microwave** for one minute at a high setting. Your microwave may give you different results, but for us, it dried the envelope glue right up. Make sure the envelopes are open when you do this.

PHOTOGRAPH BY STEVEN BARATZ

Quick Tips

ERGONOMICS

THE RIGHT KEYBOARD

#941 Dozens of keyboards claim to be ergonomic, and some of them actually deliver on that promise. One of the most comfortable keyboards around is the $390 Kinesis Ergonomic Keyboard (206-455-9220). The keyboard has an extended built-in wrist support, and it embeds the keys deeply into the keyboard, positioned lower than where your wrist sits.
Circle Reader Service No. 682

REFLECTIONS OF YOUR LIFE

#942 Nothing is harder to look at than a bright monitor with a bad case of reflectionitis. If you can see your own image clearer than the text on the screen, you may experience eyestrain and headaches. Look for add-on screen filters to correct that problem, such as the ones from Less Gauss (800-872-1051).

CELEBRITIP

THE RIGHT PLATFORM

#943 If you're looking for a computer desk (anything that costs more than 100 bucks is probably called a workstation), keep a few key points in mind. Get one that you can readily raise and lower from 27 to 29 inches, at the very least. Make sure it has a separate, adjustable keyboard holder—one that will drop down a couple of inches below the table level. Finally, spend the extra bucks and get something solid: There's nothing worse than a wobbly PC.

WOODY LEONHARD
AND VINCENT CHEN
CONTRIBUTING EDITORS

ERGONOMICS

SUCH A HEADACHE

#944 If you have a persistent headache, some of the possible culprits may be:

- stiff neck caused by chronic neck muscle strain due to bad posture
- bad lighting that is conflicting with your monitor
- display flicker
- a low-resolution monitor

DON'T KEEP THE DOCTOR AWAY

#945 Carpal tunnel syndrome announces its arrival with a tingling in your fingers, pain, and numbness. Don't put it off: Call your doctor and make an appointment—there's a good chance it's not going to go away.

KEEP YOUR DISTANCE

#946 Maintain a distance of at least 20 inches between your eyes and monitor, and adjust the monitor's angle so that you don't have to stretch your neck to look at the screen. If you wear bifocals, adjust your monitor so that you're looking down as much as possible.

BUT I DON'T PLAY TENNIS!

#947 Avoid tendinitis in the elbow (also known as tennis elbow) by making sure that your arms rest comfortably on the armrests of your chair and your elbows do not jut out at an awkward angle. Ideally, your elbows should bend at 90 degrees. The best chairs let you adjust the armrests to fit your body size.

PREVENT CARPAL TUNNEL

#948 Take plenty of breaks (at least five minutes every hour), and use a comfortable wrist rest in front of your keyboard. Don't want to spend the money on one? Use a rolled towel instead. When all else fails, try some of the ergonomic keyboards that are now available on the market.

SLOUCH CONTROL

#949 If you tend to slouch at your desk, try the $49.95 Nada Chair, an interesting contraption that forces you to sit straight (call 800-722-2587 for more information).
Circle Reader Service No. 683

EDITOR'S TIP

THE EYES HAVE IT

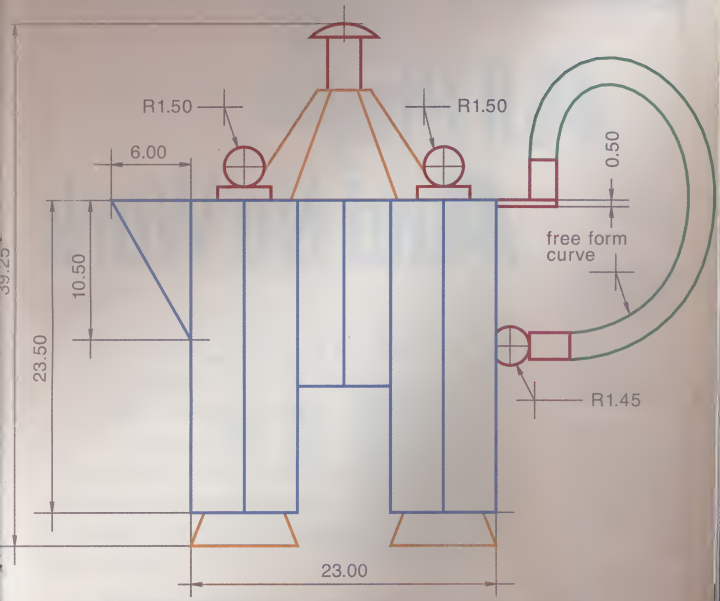
#953 Contact lenses may contribute to eyestrain in people who stare at a computer screen for hours on end. Pull the old glasses out of the drawer and see for yourself. And if you decide that glasses help, then try this: Photo-sensitive lenses soften the glare from the screen.

BILL ROBERTS
EDITOR

Time Saver: U CAN TOUCH THIS

#950 Bad posture is the most common reason for neck and upper back pain. **Sit straight,** don't slouch (and eat your vegetables). **#951** Looking for a new chair? Make sure the backrest is adjustable and tilts backward. **Ask for lumbar support,** armrests, adjustable height, and easy-rolling wheels. **#952** Do you peck at the keyboard, using only a few fingers to do all the work? This can cause muscle strain. **Learn to touch-type** and you'll reduce the pain and double your typing speed.

PHOTOGRAPHS BY JULIE CHASE



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All Play And No Work

Since time immemorial, people working on big projects have left a personal mark on their work. Cavemen painting hunt scenes would slap a handprint off in the corner. Stone carvers in Gothic cathedrals would put their own faces on gargoyles. Program developers hide their names, pictures, and some wickedly funny animations in their applications. They're called **Easter eggs** (because you have to hunt high and low to find them), and here are our favorites. —MATTHEW J. LAKE

Quick Tips

EASTER EGGS

MICROSOFT ACCESS 1.X

#954 Open Help and search for Error messages:Reference. Click on the T section and press the Page Up key, then locate and select the entry "Syntax error in LEVEL clause." After the sentence "Punctuation is incorrect," there's a period with a hot spot. Click on it for a static (read: boring—what did you expect from Version 1 of a database?) cast list.

PROCOMM PLUS FOR WINDOWS

#955 From the Window menu, select Monitor, and click on the Monitor window's title bar to make it active. Type GO DATASTORM! (case doesn't matter, but the exclamation mark is essential). Ignore any beeps you hear. Then select Help, About Procomm . . . and click on the Credits button. Instead of the usual list of names, you should see the faces of the primary developers. Check out the cursor when it's on the photograph—it turns into a big-nose-and-glasses face that you can put over the developers' faces.

OFFICE MANAGER 4.0

#956 In the Office Manager icon bar, click on the Office Manager icon (vertical pencil and notebook). Select About Office Manager, and when the About dialog box appears, hold down Ctrl and double-click on the icon. Hi, MOM appears (Microsoft Office Manager, MOM, get it?) with a list of developer names.

TUNELAND

#957 In the mountain scene, click on the railway station window. Little Howie will pop up, scrawl "Yo Bill" on the window, and deliver a message to the big shot himself.

MICROSOFT WINDOWS 3.0

#958 Hang the most boring wallpaper of all time! If you happen to have a spare copy of Windows 3.0 lying around on your hard disk (OK, we realize you probably terminated it when 3.1 came out, but if you do), load it and follow these steps. Minimize all of your applications, then hold down F3. Type WIN3, then release F3. Press Backspace.

The wallpaper turns into a list of all the people involved in programming Windows, divided into groups. Each of them is listed by e-mail address, so if you feel like sending personal congratulations to one of the Windows 3.0 parents, billg for example, all you'll need to know is Microsoft's Internet domain—which, for your information, is microsoft.com. A quick click on the left-mouse button clears the display.

MICROSOFT WINDOWS 3.1

#959 Windows 3.1's cast list has better production values than its predecessor: waving flags, cartoon characters, and a full scrolling list of credits. Hold down Ctrl and Shift while performing all the following steps. In Program Manager, select Help, About Program Manager. Double-click on the left-hand side of the Windows flag logo where it disintegrates into small squares. Nothing will happen, so click on OK to close the box. Again select Help, About and double-click on the flag. A tiny Windows flag blowing in the wind will appear next to a general dedication to the developers of Windows. This is not the real show.

Click on OK to close the box. Once again, select Help, About and double-click on one of the panes on the right-hand portion of the flag. Release Ctrl and Shift. A

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list of e-mail IDs will scroll by. The head of the cartoon pointing to the list changes if you repeat the process and select a different pane on the Windows logo. There are four heads in all (one for each pane) including a teddy bear and Bill Gates.

NORTON DESKTOP FOR WINDOWS

#960 Catch a profound philosophical treatise, complete with monochrome head shots of the program's developers. From the Norton Desktop for Windows shell, select Help, About. With one hand, press and hold N, D, and W (and ignore all the beeps). Click three times on the Norton Desktop icon. Release the N, D, and W keys and wait while Norton Desktop loads photographic images of the so-called Viper development team. You can zoom in on any particular photo with a quick click or two. After a while, a scrolling message in the title bar enlightens the masses with sayings from such profound philosophers as Richard Nixon and "Anonymous."

MICROSOFT WORD 6.0 FOR WINDOWS

#961 Type the three characters T3! and select them. Then hit the Bold button, followed by the AutoFormat button. Select Help, About Microsoft Word . . . and click on the flying Word for Windows Icon. If you can stand the suspense, wait until the end. Just before the catch-all acknowledgment of "People We Forgot," you'll see a name you may know.

MICROSOFT WORD 2.0 FOR WINDOWS

#962 The program's hidden monster movie borrows from 1950s cold war science fiction. Start Word 2.0 for Windows with any document open (even Document1). Select Tools, Macro and type SPIFF (capital letters are optional) in the Macro Name box. Press Enter or click on the Edit button. In the macro box that appears, highlight and delete the lines Sub MAIN and End Sub and the blank lines in between the two. Close the macro document and save the changes. Now choose Help, About, and click once on the Word for Windows icon.

What follows is a few minutes worth of animated running men, a green monster that gets his comeuppance in the end, and men jumping up and down in triumph. Then, there's a fireworks display with credits. You can watch this movie in reruns any time during your Word for Windows session by just repeating the last step—but be aware that this little routine tends to hog Windows' resources. If you have a large print job or a BBS download going on in the background, this will call it to a halt. One note of warning: Don't save the global changes to the glossary when you quit Word for Windows.

MICROSOFT WORD 1.X FOR WINDOWS

#963 It's not Word 2.0 for Windows' monster movie, but it's not Word 6.0's bland cast list either. Word 1.0's fireworks display is still entertaining. Open Word for Windows, and in Document1 choose Format, Define Styles. In the dialog box that pops up, press the Options button. In the Based on . . . box, type the word Normal. You'll get an error message—ignore it and click on OK to close the error box. Click on Cancel to close the Define Style dialog box and return to the document. Select Help, About. Turn CapsLock on, press O, P, U, and S simultaneously, then release them. You'll catch a fireworks display with rolling credits—nothing too thrilling, but entertaining in a pinch.

LOTUS AMI PRO 3.01

#964 Lotus combined the teen obsessions of two decades—namely Elvis and video games—into a single masterful Easter egg for Versions 2.0 and 3.0 of Ami Pro. To start the fun in Ami Pro 3.01, pull down the Tools menu and click on User Setup. Change the user's initials to GPB (all caps). Select Help, About. Hold down Ctrl-Shift-Alt, and press the function key with the number that corresponds to the current day of the week (Sunday = F1, Monday = F2, and so on). Continue to hold down Ctrl-Alt-Shift and type the word SHANK. The fast-moving heads on the screen are Ami Pro developers. Elvis (T. King) chases the jelly donut. The jelly donut avoids the mouse. You can vaporize anyone (except Elvis, of course) by clicking on their head, but they'll come back in the nearest corner.

LOTUS AMI PRO 2.X

#965 In Ami Pro 2.x choose Help, About Ami Pro, and hold down Shift-Ctrl-Alt as you follow these steps: Press F7 and type S, P, A, and M. Note the amount of available memory (in kilobytes) listed in the lower left corner of the Help, About box. Enter the last number in the available memory listing, then the third-to-last number. Release Shift-Ctrl-Alt. What you'll see is a black screen with bouncing heads floating around in it. Click on a head, and it will disappear. As each

Quick Tips

EASTER EGGS

QUICKEN 3.0

#966 Hold down any one of the following keys: S, R, or V. Click on Help, About and ignore the beeps. Depending on which key you held down, you'll see an animated windsurfer, green snake, or promotional message from the sponsor. Now go back and hold down the other key.

CORELDRAW 4.0

#967 Select Help, About CorelDraw. In the About CorelDraw screen, locate the hot-air balloon icon in the upper-left corner. Double-click on the icon. Use the left-mouse button to raise and lower the hot-air balloon that appears, and click the right-mouse button a couple of times. Elvis impersonators will parachute out of the sky.

PC TOOLS FOR WINDOWS

#968 From the Desktop application, hold Ctrl-Shift and double-click with both mouse buttons on the Desktop icon (this takes a little practice). A few niceties spice up the display. A single click anywhere in the window with the left-mouse button will shift the center of the fireworks to where you clicked. A single click with the right-mouse button will make fireworks burst at random anywhere on screen.

ALDUS PAGEMAKER 5.0

#969 Shift-select Help, About PageMaker . . . for a tasteful homage to a previous developer, complete with flower.

ALDUS PAGEMAKER 4.0

#970 Hold down Shift-Ctrl as you select Help, About PageMaker 4.0. A list of PageMaker authors and contributors scrolls in the dialog box.

MICROSOFT EXCEL 3.0

#971 In a blank worksheet, select Formula, Goto. In the reference box, type IV16384 and click on OK. This brings you to the bottom-right corner of the worksheet. Click on the down- and right-scroll bar arrows until cell IV16384 is the only cell you can see. Select Format, Row Height and type 05. Select Format, Column Width and type 0. Click on the button and watch the action.

Quick Tips

EASTER EGGS

HSC DIGITAL MORPH 1.1

#972 Select Help, About . . . and double-click anywhere in the Help Box. You'll hear greetings from Ed, the developer, accompanied by a photograph.

head disappears, the remaining heads bounce faster and faster, until you're left with a few heads moving around so quickly that you can barely keep up with them. One of the heads (it seems to change every time) will turn into a remarkably familiar teen idol of the 1950s, bearing the name T. King. Try as you might, you can't get rid of this head with any amount of clicking. Sounds like a sleazy tabloid story, doesn't it?

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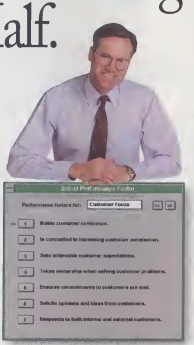

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MICROSOFT EXCEL 5.0

#973 Start Excel with a blank book. Right-mouse click on the toolbar and select Customize. Select Custom from the categories list and drag the Solitaire icon onto the blank spreadsheet. Click on Cancel to close the Assign Macro dialog box without assigning a macro. Click on Close to quit the Customize dialog box. Finally, press Ctrl-Alt-Shift, then click on the Solitaire icon. You'll see a couple of dull cast lists, followed by a hypnotic dot animation. Press Esc to quit.

MICROSOFT EXCEL 4.0

#974 Open a blank document and select Options, Toolbars. Click on the Customize button, then select Custom in the Categories list box. From the top row of icons, select the Solitaire icon and drag it onto your regular toolbar. Click on OK without assigning a command to the button, then click on Close to get rid of the Customize dialog box. Maximize the worksheet by pressing the up arrow in the top-right corner. Press Ctrl-Shift and click on the Solitaire icon.

A bouncing icon appears, breaks open allowing flies to buzz out, and is chased off by the Excel icon. In what is probably the first Windows-based reference to *Terminator 2: Judgment Day,* the words "No Problemo" appear. You can replay this animation in this or subsequent sessions by opening a new file and following the last two steps.

LOTUS 1-2-3 RELEASE 1.1

#975 Open a new worksheet and maximize it. Press F5 (Goto), and specify cell address IV8192. Drag the column width of the single cell that's showing to the left-hand side of the screen. When you release the mouse button, the column letters IU will appear in the cell. Drag the bottom line of row 8,192 up until its height is at its minimum value (namely, 1). Click on the intersection of the row and column labels in the upper left-hand corner of the worksheets—it's labeled with the letter A. In the text that follows,

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Quick Tips

EASTER EGGS

ALDUS TABLE EDITOR 2.0

#976 Hold down Shift-Ctrl, and select Help, About TableEdit. A moving list of TableEditor authors and contributors appears. It's not as spiffy as some of the other Easter eggs detailed here, but nobody's perfect.

LOTUS NOTES

#977 Notes will scroll several developers' names through the title bar when you select Help, About, and click on the words *Lotus* or *Iris* from the third paragraph.

HDC FIRSTAPPS

#978 FirstApps' Express and Power Launcher will throw up a static cast list if you select Help, About, and press Ctrl-Shift as you double-click on the spot where the starburst appears on the HDC logo.

ALDUS FREEHAND

#979 In Freehand's regular About box you get a list of AltSys developers. To get a bigger list, hold down Shift-Alt, then select Help, About FreeHand. . . . The title, TailGun, was FreeHand's code name during its early development.

CORELDRAW 3

#980 Select Help, About CorelDraw. Hold down Ctrl-Shift and double-click on the hot-air balloon icon in the upper-left corner. An elongated About box appears with a balloon at the base. Use the left-mouse button to make the balloon rise and release the button to make it descend.

QUATTRO PRO FOR WINDOWS

#981 Type in any text in any cell in a workbook, and press Enter. Select Data, Parse from the menu. Click on the Create Button, then on the Edit button. Hold down Shift and press the question-mark key three times. On the third stroke of the question mark, the menu for Cafe Borland will pop up. The chefs and tasters of the fare on the menu are mentioned by name, along with the recommended meal for the day from the French chef Philippe. two falling letters get vaporized by the starburst-laden 1-2-3 logo, and a legend in Spanish appears at the head of the cast list.

LOTUS ORGANIZER

#982 With Organizer in full flow, hold down the Shift, Ctrl, and Alt keys on the left-hand side of your keyboard, and simultaneously double-click on the wastebasket icon at the bottom-left corner of Organizer's main window. The flames in the trash can flare up between one and three times. Click on the can and, after the flare-up, watch the show. Press Esc to escape.

PARADOX FOR WINDOWS

#983 In Paradox for Windows, select Help, About. . . . When the About dialog box appears, press Shift-Alt. A new dialog box appears, a virtual lake filled with fake waves and a number of duck couples (a reference to the product name, pair o' ducks). A rather lame dialog takes place in speech bubbles between a few duck groups, with a couple of zingy lines and a lot of names. You can speed up the dialog, pause it, or shut it down, but you'll want to wait until the end, when the last name appears to a refrain from "Peter and the Wolf" (in case you're wondering, it's the music that goes with Peter himself).

MICROSOFT ACCESS 1.X

#984 Open any Access database (the sample NWIND database will do). Create a new table named "cirrus" (Access's code name while it was under development). Make sure the name uses only lowercase letters. Give this new table one field of any type, with no primary key. Save the table. Highlight cirrus in the table container. Select Help, About Microsoft Access . . . from the database menu. Hold down Ctrl-Shift, and double-click the right-mouse button on the Access logo. A dialog box will appear containing a cartoon of a pair of ducks (sounds like . . .) under a cloud. Two lightning bolts come down from the cloud–it's a cirrus cloud, by the way—annihilating the waterfowl. (Anyone spot any competition here?) Then you will see several minutes of acknowledgments. Speed up the acknowledgments by pressing Esc, but check out the last name in the Special Thanks To dialog box—is it anyone you know?

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Quick Tips

GAMES

ID SOFTWARE DOOM
HOW TO MOVE
#985 In addition to moving around with the arrow keys, you can use the greater-than and less-than signs to move right and left, respectively.

INDESTRUCTIBLE
#986 Say you don't want to get killed. Easily done. Just fire up Doom and, after you've started a game, type IDDQD. A brief message will flash in the upper-left corner of the screen and your man's eyes will turn yellow. Now you won't die.

AMMO UP
#987 To instantly restock all of your ammo and supply yourself with every weapon, type IDKFA.

WALK THROUGH WALLS
#988 There's a "no-clipping" feature in Doom that lets you walk through walls, doors, you name it. Type IDSPISPOPD. You can't pick anything up when you're in this mode.

THE 7TH GUEST
IT AIN'T OVER
#989 When you win this game (and yes, the last couple of puzzles are on the second CD), it's still not over. Look in game slot one and you'll see OPEN HOUSE. When you load that game, you'll have free run of the house to play almost any puzzle as many times as you like. Unfortunately, it was missing one of our favorite puzzles: the pentagram on the door to the attic.

GAMES

Time Saver: MO' MONEY

#996 If you're strapped for cash in SimCity 2000, here are a couple of ways to **balance the budget.** To get $10,000 as a bond, type FUND anywhere. To get $250 to $2,000 credited to your city's account, type CASS. Proceed with caution on the latter: Sometimes you'll get money, sometimes you'll end up with toxic clouds—save before you attempt it.

ID SOFTWARE DOOM
SURVIVE THE RADIOACTIVE POISON
#997 You know those radiation suits you keep seeing? Well, they're useful when you want to walk through the green, radioactive poison. They keep you from losing health and armor points. Of course, they only last a minute or so.

GET THOSE TOOLS
#998 If you want to supply yourself with any of the special tools (like infrared glasses) type IDBEHOLD and select the item's first letter from the resulting menu. Here's one more: In the map, type IDDT. You'll see the full map. Type it again to see where all the booty is.

THE 7TH GUEST
TAKE A HINT
#999 The 7th Guest includes its own hint book, giving you two hints on any puzzle. The first one is usually pretty useless, but the second sometimes makes solving the puzzle you're working on a snap. To find it, go into the library (the room furthest to the right of the main staircase on the first floor)—it's sitting on the table directly in front of you. When you get the pulsing head, click, and you'll see a tip for the last puzzle you visited. Click again and you'll go back to that puzzle.

MINESWEEPER
WHEN ALL ELSE FAILS, CHEAT
#1,000 Launch Minesweeper and type XYZZY. Press the Enter key, then the Shift key. Move the mouse pointer over the game and you'll notice that, whenever it's over a safe square, the pixel in the upper-left corner of your desktop turns white. Make sure you close or minimize all other applications before you start Minesweeper and use dark wallpaper to make sure you can see that pixel!

WAILING MINESWEEP
#1,001 Using an undocumented setting, Windows' Minesweeper can be coaxed to emit a righteous police-siren wail when you lose a game. In the Windows directory, you should have a file called WINMINE.INI. Within that file is just one section, [Minesweeper] (you can create it, too, if it doesn't exist). Under that section, add the line:

Sound = 10

Close WINMINE.INI and start Minesweeper.

Time Saver: MANIPULATE FLIGHT SIMULATOR 5

REPETITIVE TASK		SHORTCUT
#990	Pause flight	P
#991	Move rudder left	0 ON NUMERIC KEYPAD
#992	Move rudder right	+ OR ENTER ON NUMERIC KEYPAD
#993	Make a coordinated left turn	4 AND 0 SIMULTANEOUSLY ON NUMERIC KEYPAD
#994	Make a coordinated right turn	6 AND ENTER SIMULTANEOUSLY ON NUMERIC KEYPAD
#995	Return rudder to neutral position	5 ON NUMERIC KEYPAD

WONK

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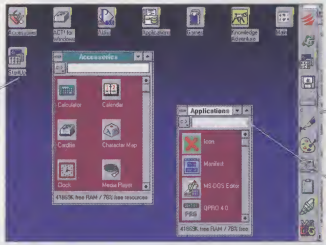

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1,001 Tips

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Adobe P.O. Box 7900 Mountain View, CA 94039	All	(408) 986-6560	(408) 562-6839	GO ACOBE
Aldus 411 First Ave. South Seattle, WA 98104	PageMaker	(206) 628-4531	(206) 623-6984	GO ALDUSFORUM
Artisoft 2202 N. Forbes Blvd. Tucson, AZ 85745	LanNtastic	(602) 670-7000	(602) 884-8848	GO ARTISOFT
ATI Technologies 33 Commerce Valley Dr. East Thornhill, Ontario, Canada L3T7N6	All	(905) 882-2626	(905) 764-9404	GO ATITECH
Borland Int'l 100 Borland Way Scotts Valley, CA 95066	All	(800) 524-8420	(408) 431-5096	GO BORLAND
Central Point Software 15220 N.W. Greenbrier Pkwy., Suite 150 Beaverton, OR 97006	PC Tools, PC Tools for Windows	(503) 690-0894 (503) 845-6111	(503) 690-6650	GO CENTRAL
Compaq 2055 State Hwy. 249 Houston, TX 77070	All	(800) 345-1518	(713) 378-1418	GO CPQFORUM
Corel 1600 Carling Ave. Ottawa, Ontario, Canada K1Z8R7	Draw	(613) 728-1990	(613) 728-4752	GO COREL
Dell 9505 Arboretum Blvd. Austin, TX 78759-7299	All	(800) 624-9896	(512) 728-8528	GO DELL
Fractal Design P.O. Box 2380 Aptos, CA 95001	All	(408) 688-8800	None	GO COMART
Gateway 2000 P.O. Box 2000, 610 Gateway Dr. North Sioux City, SD 57049	All	(800) 846-2000 Fax-back: (800) 846-4526	(605) 232-2224	GO GATEWAY
IBM Old Orchard Rd. Armonk, NY 10504	All	(800) 992-4777	(919) 517-0001	GO IBMNET
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Novell 122 E. 1700 South Provo, UT 84606	All	(801) 429-5588	(801) 429-3308 (408) 649-3443 (408) 649-3696	GO NETWIRE
Number Nine 18 Hartwell Ave. Lexington, MA 02173	All	(617) 674-0009	(617) 862-7502	None
Software Publishing Corp. 3165 Kifer Rd. Santa Clara, CA 95056	All	(408) 988-4005 Fax-back: (408) 988-6126	None	GO SPCFORUM
Symantec 10201 Torre Ave. Cupertino, CA 95014-2132	All	(503) 465-8440	(503) 484-6669	GO NORUTL
Traveling Software 18702 N. Creek Pkwy. Bothell, WA 98011	All	(206) 483-8088	(206) 485-1736	GO PALMTOP
WordPerfect 1555 N. Technology Way Orem, UT 84057	WordPerfect	(800) 228-9907	(801) 225-4414	GO WPFILES

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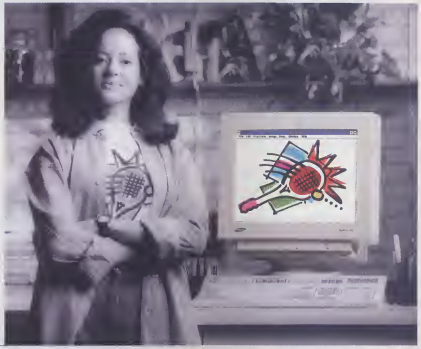

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Circle 137 on reader service card.

This Month's Free Software and Shareware

This month we've rounded up some of your all-time favorite shareware and freeware programs, which are available on our online service, PC Contact, or on disk from Public Brand Software for a fee. Shareware requires additional payment to authors for continued use. This month's files are available in PC Contact's data library 3 (Utilities/Misc.). For information on ordering them from Public Brand Software, see below. Here's a sampling of the programs you'll find this month.

WINDOWS UTILITY: PKZIP FRONT END

WinZIP If you're a hearty Windows user, you don't want to exit to DOS to unzip files. Download WNZIP.EXE, a front-end shell for PKWare's PKzip and PKunzip. Note: You need PKzip and PKunzip to use this shell.

GRAPHICS: IMAGE CATALOG

PixFolio Overwhelmed by graphics mania? Download PIXFOL.EXE to get PixFolio, a graphics file cataloging system. You can view and manipulate PCX, TIFF, TGA, GIF, BMP, RLE, and other image formats.

PIM: ORDER OUT OF CHAOS

Chaos Pimmed off? Download CHAOS.EXE to get Chaos, a shareware Windows personal information manager by Isbister Int'l.

WINDOWS UTILITY: RESOURCE

ResGauge Knowing what Windows is doing can help you avoid crashes. Download RESGAU.ZIP to get ResGauge, a freeware Windows utility that reports your available system resources.

TOP PICKS ON DISK

You can easily get all the public-domain utilities or shareware covered in this month's issue by calling Public Brand Software at (800) 426-3475 or (317) 856-7571. Ask for this month's Editors' Picks from *PC Computing*. They're available for $5 or less per disk (most disks have several utilities and programs on them), plus $5 for shipping and handling.

HOW TO JOIN

Current CompuServe or ZiffNet members type GO ZNT:PCCONTAC at any CIS I prompt. Cost varies depending on which CompuServe plan you belong to and the speed at which you connect. For complete membership and hourly rate information, type GO RATES while online.

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Follow these steps to join ZiffNet and participate in the PC Contact forum:

1. Set these modem and software parameters: 7 data bits, even parity, 1 stop bit, full duplex.
2. Call CompuServe's customer assistance line at (800) 848-8990 (United States) or (800) 635-6225 (Canada). From other countries, dial CompuServe direct at (614) 457-8650. You can also call CompuServe with your modem. Set your modem as instructed above and dial (800) 346-3247. Press Enter when your modem connects. Type PHONES at the HOST NAME prompt, press Enter, and follow the onscreen prompts to find a local access number.
3. Dial the access number with a modem. When your modem connects to the network, press Ctrl-C to get the system's attention.
4. At the HOST NAME prompt, type CIS and press Enter.
5. At the USER ID prompt, type 177000,5300 and press Enter.
6. At the PASSWORD prompt, type PC/CONTACT and press Enter.
7. At the ENTER AGREEMENT NUMBER prompt, type PCC94 and press Enter.

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Circle 173 on reader service card.

SUPERBIG, ULTRAFAST

Disk Drives: Server or Desktop, Get a Gig

DOS's CHKDSK utility doesn't lie. Though you may slap your head in disbelief when it reports that your 350MB hard drive can offer up no more than 6MB of free disk space, facts are facts. Where did all that capacity go? It's no secret that today's porky programs insinuate themselves into larger spaces. But data files are gaining girth as well. Simple word processing documents often contain a megabyte or more of graphics. Even e-mail messages come laden with fonts and images. Factor in the growing popularity of audio and animation, the corporate race toward document imaging, and the slumping costs of video conferencing, and most of us can expect our storage needs to double within the next 18 months.

But there's good news on two fronts. First, the average price per megabyte of 1GB hard drives has fallen from about $1.50 to less than 80 cents in the past two years. Now there's no reason to be flinty about the size of the drive you buy.

Second, IDE's 528MB limit is now history. Large capacities have traditionally meant buying SCSI drives. No longer: 1GB, 3.5-inch IDE drives are available from a variety of manufacturers. Still, you have your choice, particularly because Windows 4.0 will have built-in SCSI support, which should eliminate much of the frustration of installing SCSI (Windows NT, Unix, and OS/2 already have it).

Whichever interface you choose, performance is key. Look for a rated access time of 13ms or less. If drive performance is reported as seek time, you'll want 10ms or faster. Likewise, your drive should have an adequate buffer or cache to keep performance up to par—64K at a minimum, but anything larger than 256K is probably wasted. (If it holds disk reads, it's a buffer; if it holds both reads and writes, it's a cache.)

Better drives come with their own diagnostics and partitioning software. Also, mounting rails should be included in the price of the drive. Toll-free technical support can be important during installation if you have to reset jumpers. But even if the call is on your nickel, look for a three-year warranty at the very least. After all, a gigabyte of data is a terrible thing to lose. MARTY JEROME

HARD DRIVES NOW THE PRICE IS RIGHT TO BUY A GIGABYTE

A. Interface: IDE for desktop systems with up to 1GB of capacity. For larger capacities, get a SCSI-2 drive interface.

B. Features and options: Self-parking heads, diagnostic and partitioning software, spindle synchronization for use in redundant arrays of inexpensive disks (RAID), support for single-ended differential SCSI (if it's a SCSI drive).

C. Cache or buffer: 64K to 256K (a 512K segmented cache is top-of-the-line).

Performance: 13ms or faster vendor-rated average access time; if vendor reports performance as average seek time, 10ms or faster.

Capacity: 500MB or greater.

Size: Half-height or full-height, depending on your system's drive bays.

RED FLAGS: Mounting brackets and cables should come with the disk; look for a 30-day full money-back guarantee, a three- or five-year warranty, and a mean time between failure rating of at least 200,000 hours.

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NETWORK LASER PRINTERS

Emulations: PCL 5, PostScript Level 2 with automatic emulation switching.

Print engine speed: At least 17 ppm.

Resolution: 600 dpi.

Processor: 16MHz RISC.

Resident fonts: 90 total—10 TrueType (matching Windows 3.1), 45 PCL 5, 35 PostScript.

RAM: 8MB.

Interfaces: Parallel and 10Base-T or 10Base-2 Ethernet, Token Ring, or LocalTalk.

Network support: Concurrent for Novell NetWare, Windows NT, and Windows for Workgroups.

Paper capacity: 1,000 sheets.

Warranty: One year with onsite service.

Features and options: SNMP support, particularly the ability to download printer drivers to all network printer users from a central node; EPA Energy Star compliance; legal-sized paper tray; LCD front-panel display.

COLOR PRINTERS

Processor: Look for a 16MHz RISC CPU at least.

RAM: 4MB, upgradable to 8MB.

Interface: A parallel port is usually sufficient.

Fonts: 35 Adobe PostScript Type 1 at the very minimum.

Ribbon: A four-color ribbon will give you blacker blacks.

Emulations: PostScript Level 1 and 2, and PCL 5.

Print speed: 2 ppm.

Resolution: 300 by 600 dpi.

Features and options: Internal network interfaces, support for four-color ribbons (three colors plus black), EPA Energy Star compliance, ability to print on B-oversize paper.

RED FLAGS: Be sure vendor provides a PostScript Level 2 driver; despite some claims, business-quality printing on plain copier paper isn't a reality yet, although many printers can manage low-weight, uncoated paper.

ETHERNET ADAPTERS

Card type: 16 bit, ability to autoconfigure to 8 bit.

Network support: NetWare, LAN Manager, LAN Server, Windows for Workgroups, Windows NT Advanced Server.

Drivers: Support for NDIS and ODI drivers, or Eagle NE2000–compatible drivers.

Media connectors: For 10Base-2 (Thinnet) and 10Base-T (RJ-45); automatic sensing of media configuration.

Installation: Should be software configurable and support interrupt levels above IRQ 7.

Features and options: Upgradable boot PROM, SNMP support, collision and link status LEDs, bus-mastering interface, built-in virus scanning, downloadable flash boot PROM, 10BASE-5 (thick Ethernet) connector, full-duplex Ethernet support.

Other requirements: Diagnostic utilities, slot-bracket mounted, transmission and reception LEDs, 16K or larger buffer.

RED FLAGS: Cards that support only 8-bit buses can restrict CD performance.

SOUND CARDS

Compatibility: Sound Blaster.

Mode: Stereo.

Card type: Internal.

Sampling capability: 8- and 16-bit record and play (MPC 2 standard).

Maximum sampling rate: 44.1kHz.

Synthesizer: Wave or FM with Wave option.

Voices: 16 simultaneous in Sound Blaster mode, 24 in Roland.

Bundled software: Windows and DOS utilities for playing, recording, and editing digital and MIDI files.

Ports: Speaker, microphone, and joystick.

Features and options: Programmable digital signal processor (DSP), SCSI port for a CD-ROM drive, QSound Virtual Audio microphone, powered speakers, bundled software that supports OLE 2 so you can easily embed sounds in documents.

RED FLAGS: Cards that play but can't record 16-bit sound or have a proprietary (non-SCSI) CD-ROM interface may be less useful.

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21. Paradox 4 5 for Windows 136 95
22. WP 6 0A for Windows. 309 95
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with adv signal processing $199
Sound Blaster AWE32 .... $265

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Pro Audio Spectrum 16 .... $99
Pro Audio Studio 16 .... $118
Premium 3-D SCSI-2 / MCD .... $145 / $145
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Logitech SoundMan Wave 18 .... $182
Diamond Sonic Sound $215
DigiSpeech Portable Sound+ $145
RAP-10 Roland Audio Prod $249
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NETWORK SERVERS

CPU: Intel 486DX2/66, 486DX4, or Pentium.

RAM: 16MB, expandable to 128MB.

CPU RAM cache: 256K.

Display: 14-inch Super VGA color or monochrome.

Video card: Super VGA with 512K of RAM.

Hard drive: 1GB SCSI-2.

Bus: Eight EISA slots with two VL-Bus or PCI.

Drive bays: Two full-height 5¼-inch, two half-height 5¼-inch with front-panel access, two 3½-inch.

Features and options: RAID-5, DAT backup, uninterruptible power supply, dual-speed CD-ROM drive, built-in SCSI-2 controller, Ethernet controller, protected power switch to prevent accidentally turning the power off.

Other requirements: FCC Class A or better, UL listed.

RED FLAGS: Systems with ISA bus or slotted RAM are less upgradable. Database and other application servers need more CPU power than a file server.

MIDRANGE DESKTOP SYSTEMS

CPU: Intel 486DX2/66, 486DX4, or Pentium.

Secondary cache: 256K four-way set-associative.

Memory: 8MB, expandable to 32MB, 36-pin SIMMs.

Floppy drive: 3½-inch.

Hard drive: 400MB or larger IDE or SCSI-2.

Video: VL-Bus or PCI Windows accelerator, 15-inch monitor or larger with 72Hz refresh at 1,024 by 768 pixels.

Slots: Eight ISA slots for full-sized case (including two VL-Bus or PCI), three ISA slots for small-footprint case with integrated VL-Bus or PCI video and drive.

Drives and bays: One 3½-inch 1.44MB and one 5¼-inch 1.2MB floppy drive, five half-height 5¼-inch bays.

Features and options: Dual-speed or faster CD-ROM drive, sound card or built-in sound capability, two parallel ports, two COM ports, and keyboard and mouse ports.

RED FLAGS: Watch for Pentium-upgradable systems that don't include a ZIF socket, secondary CPU cache, or lots of slots for extra RAM.

SUBNOTEBOOK PCS

CPU: Intel 33MHz 486SX .

Display type: 7½-inch backlit passive, dual-scan passive, or active-matrix LCD.

Weight: 4 pounds or less.

Size: Smaller than 8½ by 11 by 2 inches.

Keyboard: 85 percent of full-sized keyboard.

RAM: 4MB, expandable to 16MB.

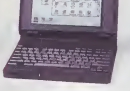
Hard drive: 80MB or larger.

Features and options: Removable hard drive, high-speed internal fax modem, integrated pointing device, infrared keyboard connection.

Other requirements: External floppy, at least one PCMCIA Type II slot, small recharger (5½ by 3 by 1½ inches or smaller).

RED FLAGS: Subnotebook displays and keyboards entail compromise—try before you buy, or make sure there's a money-back guarantee with no restocking charge. In addition, many subnotebook batteries run down quickly, particularly when you're using color. Make sure the battery is easy to replace. User-installable RAM is also a plus.

NOTEBOOK PCS



CPU: 33MHz 486.

Display type: 9½-inch or larger backlit dual-scan passive- or active-matrix color LCD with accelerated local bus. Look for adjustable contrast and brightness controls.

Weight: Less than 7 pounds without AC adapter; total traveling weight less than 9 pounds.

Size: Smaller than 10 by 12 by 2 inches.

RAM: 8MB, expandable to 20MB.

Hard drive: 120MB.

Ports/slots: Parallel, 9-pin serial, PS/2 ports; one PCMCIA Type III slot or two Type II slots.

Features and options: Ability to swap out floppy drive for second battery, removable hard drive, user-installable RAM, integrated pointing device. Pen pointing device and touch screen can be useful in some instances. Look for notebooks that support new Duracell standard-sized rechargeable batteries.

Other requirements: Standby mode, pop-up battery gauge, 6-by-3-by-3-inch (or smaller) battery recharger.

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- 56K Modem
- SoundPower™ with SoundPort™ connectors

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HARDWARE

✔ BATTERY BACKUPS ✔

American Power BK280B / BK400B ..... $71/$95
American Power BK450 / BK650 ..... 105/$55
American Power BK900 583
American Power BK1200 485
American Power APB20 279
American Power APB20 SmartUPS 339
American Power APB30 SmartUPS 529
American Power APB40XL SmartUPS 999
American Power APB50 SmartUPS 675
American Power APD500 SmartUPS 1086
American Power Network Surge Arrest 40
Tripp Lite BC650 / BC450 ..... 95/140
Tripp Lite BC650 / 500 LAN 173/179
Tripp Lite BC650 LAN / TS3 LAN 229/399
Tripp Lite BC650 / 650 LAN 339/339
Tripp Lite Omni 500 LAN / 650 LAN 239/275
Tripp Lite Omni 750 LAN / 1250 LAN 298/546
Tripp Lite LC1200 / LC1500 ..... 139/187

✔ COMPUTERS ✔

AST Bravo LP 486DX2/66 170MB $699
AST Premmia 486SX25/50 340MB 8MB 2199

HARDWARE

✔ SCANNERS ✔

Avec 2400 Color Flatbed w/Photoshop $119
Canon IX4015 w/module 219
Hewlett Packard Scanjet 2P grayscale 479
Hewlett Packard Scanjet 5CX Color 969
Logitech Scanman 256 147
Microtek Scanmaker II 24 w/OmniScan Sftw. 449
Microtek Scanmaker II 6 w/Photoshop LE 879
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✔ DRIVES ✔

Connor CFP2540A 3120MB Intern E IDE 259
Connor CFS420A 420MB Intern IDE 279
Connor CFS540A 540MB Intern IDE 387
Connor CFP 1060S 1.0GB Intn SCSI 789
Maxtor 7840A 340MB IDE 269
Maxtor 7540AA 540MB 12mm IDE 359
Microbotics 2GB 12GB Intn SCSI 774
Microbotics 2GB 12GB 12mm SCSI-2 969
Micropolis 1926 2.1GB 11mm SCSI-2 1449
Seagate ST32430A 2140MB 16mm IDE 599
Seagate ST32550A 2GB 16mm IDE 229
Seagate ST32141A 2MB 1299
Seagate ST32514A 4GB 16mm IDE 349
Seagate ST39102A 9GB 12mm IDE 429
Seagate ST34371N 1GB Intn SCSI-2 799
Seagate ST32550N 2GB Intn SCSI-2 799
Seagate ST12400N 2.1GB Intn SCSI-2 1449
Seagate ST34520N 2GB Intn SCSI-2 2/11 1299
Seagate ST15150N 4.2GB SCSI Intn 2579
SyQuest Extra 88MB Hard/Soft w/ IBM 369/39
SyQuest Forte 88MB 4x/parallel/ sp/ monoVGA 439
Teac FD505 Low Profile drive 119
Teac / Toshiba Floppies ..... ALL 59

✔ MODEMS ✔

Boca Product Modem 14.4 w/Fax 159
Boca 14.4 w/Fax int / ext. 97/125
Boca V.FAST 28.8 w/Fax 189/249
Hayes Accura 144 / FAX/SCEC Int 155
Hayes Optima 144 / FAX144 EZ Int 369
Hayes Optima 28.8 / FAX144 EZ Int 599

HARDWARE

✔ TAPE BACKUP ✔

Colorado DJ-20 250MB 165
Colorado Trakker 120MB 169
Colorado Trakker 250MB 327
Colorado FT 20.0GB SCSI w/controller int / ext 345

✔ DIGITIZERS ✔

Calcomp 12x12 / 12x18 / w/6-button 279/339
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Summagraphics II 12x12 / 12x18 / Pro 299/529
Summagraphics Summagrid IV 24x36 1199
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✔ PLOTTERS ✔

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✔ VIDEO BOARDS ✔

ATI Graphics Wonder Mach32 1MB ISA/VLB 143
ATI Graphics Ultra- 2MB ISA 189
ATI Graphics Ultra Pro 2MB VLB/ISA 270
ATI Graphics Ultra Pro 2MB PCI/ISA 301
ATI Graphics Pro Turbo 2MB ISA/VLB/PCI 379
ATI Graphics Pro Turbo 4MB ISA/VLB/PCI 589
Diamond Speedstar Pro 1MB ISA/VLB 139
Diamond Stealth Pro 1MB 2MB ISA/VLB 2160SR 189
Diamond Viper 2MB Local Bus 337
Matrox MGA-Millenium 2MB ISA/VLB 379
Matrox MGA-MP3V 3MB VLB 560
Matrox PCI2 2MB PCI 270
MedaVision Pro 4MB 1280x1JB 695
Number Nine GXE 1/2MB and 1/1 1/2 ..... 284/429
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AST Bravo MB 486SX33 200MB mono $649
AST Bravo MB486SX25 170 Active Ctr 2029
AST Bravo MB 486DX2/50 270 Color 2239
Chrion Notepad 486 SX33/200MB 1899
Chrion Notepad 486 DX2/50 Color 2199
Chrion Notepad 486 DX33/80MB Color 2725
Chrion Notepad 486 DX2/66 Color 3025
Compaq Concerto 486SL/25 120MB Mono 1275
Compaq Concerto 486SL/25 170MB Mono 1475
Compaq Contura AERO 486SX33 170MB STN CV 2059
Compaq Contura AERO 486SX33 350MB STN CV 2359
Compaq Compaq Contura 4/25 120MB 1749
Compaq Compaq Contura 4/25 170MB 1949
Compaq Compaq Contura 4/25C 120MB Color 2599
Compaq Compaq Contura 4/25C 250MB Color 2899
Compaq LTE/LTE 120MB TFT Mono 2129
Compaq LTE 486/33c/40 170MB STN CV 2399
Compaq LTE 486/33c/40 170MB TFT Color 3499
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Compaq LTE 486/33c/75 340MB TFT Clr 5499
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MULTIMEDIA

✔ MULTIMEDIA ✔

Creative Labs Digital Edge 3X CD-ref 699
Creative Labs Discovery 16 int 249
Creative Labs Omni CD int 205
Creative Labs Gameblaster CD int 315
Creative Labs Educationmint int 412
MediaVision Pro Deluxe Edition MV3000 670
MediaVision MV-3000 Sound Blaster 480
MediaVision MV-4000 Premier set 1499
MediaVision Fusion Double CD16 Int. 226
MediaVision Pro 16 Multimedia Kit 679
MediaVision Mempluss ext CD ROM Kit 499
Sony CD500 AA Sound Kit ext 229
Sony CD535 AA Mrkrdia Kit ext. 469
Sony CD275SA Mrkrdia Kit ext. 499
Turtle Beach Multisound ungrd 1221
Turtle Beach Monterey Mb Media upgrd 989

✔ VIDEO CAPTURE ✔

Creative Labs Video Blaster SE 259
Creative Labs Video Spigot 237
Creative Labs Video Blaster FS 2000 ..... CALL
MediaVision P-Motion Studio 169
TrueVision Video VDA16 760
TrueVision Targa+ 16 / 64 ..... 109/1349

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Chrion CD535 200ms SCSI int 325
Chrion CD533S 220ms w/sound 349
MediaVision Reno 160ms int 279
NEC SCIT CCR-400 portable 399
NEC SK CDR 900 int / 3SE CDR 400 ..... 429/449
NEC CDR-900 external 4X 629
Sony CDU-33A01 int dbl speed Blare 149
Sony CDU-33A01 int 159
Sony CDU-561 285ms SCSI int 219
Sony CDU561 285ms SCSI ext 429
Toshiba TXM-4101 int / ext 224/285
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DFW1600 / DFW3000 ..... 1107/2299
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Deskjet 520 289
Deskjet 540C 569
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Mitsubishi Diamond Scan 17" 1280x1024 .943

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BJC-600 ..... 539*
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NETWORK **SERVERS**

CPU: Intel 486DX2/66, 486DX4, or Pentium.

RAM: 16MB, expandable to 128MB.

CPU RAM cache: 256K.

Display: 14-inch Super VGA color or monochrome.

Video card: Super VGA with 512K of RAM.

Hard drive: 1GB SCSI-2.

Bus: Eight EISA slots with two VL-Bus or PCI.

Drive bays: Two full-height 5¼-inch, two half-height 5¼-inch with front-panel access, two 3½-inch.

Features and options: RAID-5, DAT backup, uninterruptible power supply, dual-speed CD-ROM drive, built-in SCSI-2 controller, Ethernet controller, protected power switch to prevent accidentally turning the power off.

Other requirements: FCC Class A or better, UL listed.

RED FLAGS: Systems with ISA bus or slotted RAM are less upgradable. Database and other application servers need more CPU power than a file server.

MIDRANGE **DESKTOP** SYSTEMS

CPU: Intel 486DX2/66, 486DX4, or Pentium.

Secondary cache: 256K four-way set-associative.

Memory: 8MB, expandable to 32MB, 36-pin SIMMs.

Floppy drive: 3½-inch.

Hard drive: 400MB or larger IDE or SCSI-2.

Video: VL-Bus or PCI Windows accelerator, 15-inch monitor or larger with 72Hz refresh at 1,024 by 768 pixels.

Slots: Eight ISA slots for full-sized case (including two VL-Bus or PCI), three ISA slots for small-footprint case with integrated VL-Bus or PCI video and drive.

Drives and bays: One 3½-inch 1.44MB and one 5¼-inch 1.2MB floppy drive, five half-height 5¼-inch bays.

Features and options: Dual-speed or faster CD-ROM drive, sound board or built-in sound capability, two parallel ports, two COM ports, and keyboard and mouse ports.

RED FLAGS: Watch for Pentium-upgradable systems that don't include a ZIF socket, secondary CPU cache, or lots of slots for extra RAM.

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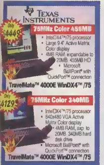

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American Power BK250B / BK400B	97/155
American Power BK450 / BK600	185/255
American Power BK900	369
American Power BK1250	485
American Power AP400	279
American Power AP600 SmartUPS	339
American Power AP900 SmartUPS	529
American Power AP900XL SmartUPS	999
American Power AP1250 SmartUPS	675
American Power AP2000 SmartUPS	1099
American Power Network Surge Arrest	49
Tripp Lite BC250 / BC400	95/145
Tripp Lite BC500 / 500 LAN	173/179
Tripp Lite BC600 LAN / 750 LAN	229/289
Tripp Lite BC900 LAN / 1250 LAN	339/439
Tripp Lite Omni 500 LAN / 600 LAN	239/275
Tripp Lite Omni 750 LAN / 1250 LAN	336/545
Tripp Lite LC1200 / LC1800	139/187

COMPUTERS

AST Bravo LP 486DX2-66 170MB	1689
AST Premmia 486DX2/50 340MB 8MB	2199
AST Premmia LX Pentium 60 270MB 8MB	2699
Compaq Prolinea 486SX/50 200MB	1259
Compaq Prolinea 486DX2/50 200MB	1439
Compaq Prolinea SX/33 200MB CD-ROM	1599
Compaq Prolinea 486DX4/100 340MB	2349
Compaq DeskproXE 560 P60 525MB	3019
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CONTROLLERS

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Adaptec AHA-2742 SCSI-2 EISA w/Flop	299
Adaptec AHA-2842 SCSI-2 VESA w/Flop	249
Adaptec AHA-2940 PCI SCSI Master	289
Boca IDE 2-HDD, 2-FDD ide002	35
Boca IDE 2-HDD 2 FDD 2 ser 1-par	49

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Canon IX415 w/rebate	929
Hewlett Packard Scanjet 2P greyscale	479
Hewlett Packard Scanjet 2CX Color	969
Logitech Scanman 256	149
Microtek Scanmaker II G w/OmniScan b&w	449
Microtek Scanmaker II XE clr w/Photoshop LE	879
Microtek II SP color w/ Adobe Photoshop LE	749
Microtek II HR High Resolution color	1009
Microtek Scanmaker III 36-bit	CALL
Relisys 2412 PC Clr Flatbed w/Photoshop	1199
Relisys All Models	PLEASE CALL
Mustek Color Artist Handheld	279

DRIVES

Conner CFS210A 210MB 14ms IDE	209
Conner CFS420A 426MB 14ms IDE	279
Conner CFA540A 528MB 12ms IDE	387
Conner CFIP 1060S 1 0GB 9ms SCSI	789
Maxtor 7345A 345MB IDE	259
Maxtor 7546A 546MB 12ms IDE	359
Micropolis 2210A 1GB 10ms IDE	774
Micropolis 2217 1 7GB 10ms SCSI-2	989
Micropolis 1926 2 1GB 11ms SCSI-2	1449
Seagate ST3243A 214MB 16ms IDE	199
Seagate ST3290A 260MB 16ms IDE	229
Seagate ST3391A 341MB	269
Seagate ST3550A 452MB 12ms IDE	319
Seagate ST3655N 12ms SCSI	429
Seagate ST3655A 529MB	399
Seagate ST31200N 1GB 9ms SCSI-2	799
Seagate ST12400N 2 1GB 9ms SCSI-2	1449
Seagate ST43400N 2 9GB 11ms SCSI-2	2119
Seagate ST15150N 4 2GB SCSI 8ms	2579
SyDos Extra 88MB Rmvbl 88i int / 88E ext	399/459
SyDos Puma 68MB ext/parallel removable	439
Teac FD505 dual floppy drive	119
Teac / Toshiba Floppies ALL	59

MODEMS

Boca Pocket Modem 14 4 w/Fax	159
Boca 14 4 w/Fax int. / ext.	97/125
Boca VFAST 28 8 int. / ext.	186/214
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Multitech 1432BA 14 4 fax/modem ext	409
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Practical Periph 14 4 w/fax mini tower	127
Supra 14.4 S/R Fax int	119
Supra Fax Modem 14 4LC ext	140
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US Robotics Sportster 14 4 w/fax int	118
US Robotics Sportster 14 4 w/fax ext	139
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Couner V 34 Ready Data/Fax	CALL
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Colorado DJ-20 250MB	165
Colorado Trakker 120MB	199
Colorado Trakker 250MB	327
Colorado PT-25 2GB SCSI w/controller int	945

DIGITIZERS

Calcomp 12x12 / 12x18 w/16-button	279/558
Kurta 12x12 XTG / 12x18 XGT	199/419
Summasketch III 12x12 / 12x18 Pro	299/529
Summasketch Summagrid IV 24x36	1149
Wacom ArtZ 6x8 / 6x9	332/445

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92G7201 73G3131 (4Meg)	Value Point Performance PC Server 4/66	184 00
92G7203 (8Meg)	Value Point Performance PC Server 4/66	359 00
92G7204 (16Meg)	Value Point Performance, PC Server 4/66	699 00
92G7205 (32Meg)	Value Point Performance, PC Server 4/66	1539 00
96F9290 (4Meg)	Standard 1x3-70 Simms	172 00
96F9291 (16Meg)	Standard 4x9-70 Simms	672 006450902 (2Meg)
56 57 57SX 90 95, P-75, 57SLC	Value Point 77 486DX2 486SX SVR 85	90 00
60G1622 (16Meg)	PS/1 Value Point Perf	699 00
6450128 (4Meg)	57SX 90 95 P-75, 57SLC 56, 58SLC P/S1 386SX, Mod-2123 2133 2155 Val Pt 77, 486CS2, 486SX, SVR85 Value Point 77 486DX2 486SX, SVR 85	175 00
6450129 (8Meg)	35SX 40SX	339 00
6450130 (8Meg)	56 57 57SX 90 95 P-75 57SLC Value Point 77 486DX2 486SX, SVR 85	339 00
6451158 (4Meg ecc)	486 95XP 95A (install in pairs)	209 00
6451159 (8Meg ecc)	48g 95XP 95A (install in pairs	409 00

IBM NOTEBOOK & LAPTOP MEMORY

8189098 (4Meg)	Thinkpad 500	199 00
8189099 (8Meg)	Thinkpad 500	389 00
79F0999 (2Meg)	LX40 N33SX PS Note Thinkpad 710T	103 00
79F1000 (4Meg)	LX40 N33SX PS Note Tkpd 350, 350c, 710T, PS Note 425	199 00
79F1001 (8Meg)	LX40, N33SX PS Note Thinkpad 710T	389 00
07G1415 (4Meg)	Thinkpad 750 750c, 755 360	199 00
07G1416 (8Meg)	Thinkpad 750, 750c 755 360	389 00
66G0094 (16Meg)	Thinkpad 750, 750c, 755 360	849 00
07G1420 (4Meg)	CL57LSX LpTp, Thinkpad 700 700C, 720 720C	209 00
07G1421 (8Meg)	CL57LSX LpTp, Thinkpad 700 700C, 720, 720C	389 00
60G0378 (8Meg)	Thinkpad 350, 350c, PS Note 425	349 00
80G0379 (16Meg)	Thinkpad 350, 350c PS Note 425	649 00
92F8804 (2Meg)	N45SL	109 00

COMPAQ MEMORY MODULES

MODEL	AMT UPGRADED	CMPQ PART #	PRICE
DeskPro 386/33, 386/33L,	2Meg Module	115144-001	139 00
486/25, 486/33L,	8Meg Module	116561-001	429 00
486/50L, System Pro	32Meg Module	116568-001	1459 00
DeskPro 386/33L, 486/33L	(Exp Bd)	116569-001	279 00
DeskPro 386/25, 386/20	1Meg Module	113131-001	79 00
	4Meg Module	113132-001	199 00
DeskPro 386S-16MHz	1Meg Exp Bd	113633-001	149 00
	4Meg Exp Bd	113634-001	279 00
	1Meg Module	113646-001	79 00
	4Meg Module	112534-001	199 00
DeskPro 386/20E	1Meg Exp Bd	113644-001	149 00
DeskPro 386/25E	4Meg Exp Bd	113645-001	279 00
	1Meg Module	113131-001	79 00
	4Meg Module	113132 001	219 00
DeskPro 286N, 386N,	1Meg Module	118688-001	59 00
386SX/20 386/25M, 486/33M,	2Meg Module	118689-001	89 00
486S/25M, 486S/16M	4Meg Module	118690-001	169 00
Port. I Series 486C	8Meg Module	128877-001	389 00
M Series Exp Bd	0-64Meg	129160-001	189 00
DeskPro 386/16	1Meg Kit	108071-001	99 00
	4Meg Kit	108072-001	299 00
	1-2Meg Exp Bd	108069-001	239 00
	4-8Meg Exp Bd	108070-001	437 00
DeskPro 286	512K Kit	113012-001	49 00
DeskPro 5/60, 5/66M, 5/66M (ALL OF THESE MACHINES USE THESE MODULES)	8Meg Kit	149911-001	389 00
Prosignia 5/60	16Meg Kit	149949-001	707 00
Proliant 100 5/60	32Meg Kit	149912-001	1399 00
Proliant 2000 4/30, 5/66	64Meg Kit	149913-001	2700 00
Proliant 4000 4/50, 5/66	128Meg Kit	149914-001	5900 00
Prolinea 386 3/25S, 3/252S	2Meg	141738-001	109 00
	8Meg	141742-001	338 00
Prolinea 486 4/25S, 4/33, 4/50 4/66, COS	2Meg	141683-001	95 00
Prosario series	4Meg	141684-001	175 00
	8Meg	141685-001	339 00
Prosignia PC Server 486/33,	8Meg	141685-001	339 00
486 DSX/66	16Meg	149320-001	699 00
	32Meg	149147-001	1525 00

COMPAQ LAPTOPS & NOTEBOOKS

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LTE/286	4Meg Bd	117081-003	179 00
LTE/386S/20	4Meg Module	121125-002	209 00
LTE LITE/20, 25, 25C	4Meg Module	129769-002	209 00
LTE LITE/20, 25, 25C	8Meg Module	129769-003	419 00
LTE LITE/20, 25, 25C	16Meg Module	129769-004	809 00
LTE LITE 425C/33C/25E/255L	4Meg Module	142337-002	189 00
LTE LITE 425C/33C/25E/255L	8Meg Module	142337-003	349 00
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Contura 320, 325	2Meg	139497-001	99 00
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T2000SX/T1000LE	4Meg	PC-PA8314U	189 00
T2000SX/T1000LE	8Meg	PC14-PA8315U	359 00
T2000SXE/2200SX/T1800 1850, C	2Meg	PC-PA2000U	94 00
T2000SXE/2200SX/T1800, 1850, C	4Meg	PC-PA2001U	189 00
T2000SXE/2200SX/T1800, 1850, C	8Meg	PC-PA2002U	359 00
T4400SX, SXC T6400, T6600	4Meg	PC-PA2004U	199 00
T4400SX, SXC T6400, T6600	8Meg	PC-PA2005U	369 00
T4400SX, SXC T6400, T6600	16Meg	PC-PA2010U	899 00
T4500, C T4600, T4700 T1900 C T1910, T1950 (3 3 v)	4Meg	PC-PA2012U	204 00
T4500, C T4600, T4700 T1900 C T1910, T1950 (3 3 v)	8Meg	PC-PA2013U	399 00
T4500, C, T4600, T4700, T1900 C T1910, T1950 (3.3 v)	16Meg	PC-PA2014U	799 00
T3300SL	6Meg	PC-PA2008U	268 00
T3300SL	16Meg	PC-PA2009U	699 00
T3400CT	4Meg	PC-PA2019V	194 00
T3400CT	8Meg	PC-PA2020V	369 00
T3400CT	16Meg	PC-PA2021V	779 00
T3400CT	32Meg		1549 00
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T1600	2Meg	PC8-PA8302U	99 00
T3100	2Meg	PC3-PA7135E	139 00
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T3100SX	2Meg	PC15-PA8308U	109 00
T3100SX	4Meg	PC15-PA8310U	199 00
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T6100	2Meg	PC7-PA8301U	95.00
T5200/T8500	2Meg	PC10-PA8304U	114 00
T5200/T8500	8Meg	PC10-PA8313U	419 00

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MODEL	AMT UPGRADED	MANU PART #	PRICE
ACER 730	2Meg/4Meg/8Meg		109/209/399
ACER 750	4Meg/8Meg/16Meg		199/459/869
ALR Ventura	4Meg	12407980	249 00
AST Bravo & Explorar	4Meg/16Meg	501255-001 -002	199 00/789 00
AST Notebook Prem Exec 386SX/20/25/25L	4Meg	500814-003	189 00
AST Power Exec 3/25C, 425EL	4Meg		199 00
AST Power Exec 3/25C, 425EL	16Meg		819 00
AST Power Exec 425SL	4Meg	501166-001	199 00
AST Power Exec 425SL	16Meg	501166-003	819 00
AST Power Exec 4/33SL	4Meg/16Meg	501318-001 002	194 00/769 00
AT&T Safari NSX/20	4Meg	PEC 37651	259 00
Bondwell 8310, Plus	1Meg	23050-09100	109 00
Bondwell 8310V SX	1Meg		109 00
Bondwell 8310V SX	4Meg		229 00
Canon Innova 486	2Meg/4Meg/8Meg		109/209/449
Canon Notejet 486	4Meg/ 8 Meg		199 00/389 00
Chicony, Ultra, Hyundai 386	4Meg		199 00
Epson NB3	4Meg	A808511	199 00
Everex Tempo LX, LX20 Carrier	2Meg	PCA 00053-0001	109 00
Gateway 2000 Nomad 425 DXL/SXL	4Meg/16Meg		199 00/1549 00
Gateway 2000 486 Hardbook	4Meg/16Meg		199 00/799 00
Goldstar GS520 386SX/16	4Meg	S386-4M	249 00
Grid 1720 1750, 1755	1Meg		49 00
HP Omnibook	2Meg/4Meg		129 00/279 00
Magnavox Metalis	1Meg/4Meg	286, 386SX	109 00/199 00
NEC Prospeed 286, 386SX-16	1Meg	PC21-21	79 00
NEC Prospeed 286, 386SX-16	4Meg	PC21-22	199 00
NEC Prospeed 386	2Meg	PC31-21	119 00
NEC Prospeed 386	8Meg	PC31-22	399 00
NEC Prospeed 386SX-20	1Meg	PC43-21	79 00
NEC Prospeed 386SX-20	4Meg	PC43-22	199 00
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Packard Bell 386SX 286	1Meg 4Meg	286, 386SX	109 00/199 00
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Sharp PC-6220	1Meg	CE 6218	79 00
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TI Travelmate 2000	1Meg	2568034-0001	79 00
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TI 4000	4Meg/16Meg		199 00/1299 00
Tandy 1510, 2810, 3810	1Meg		49 00
Tandy 2820, 3820, 3830	2Meg/4Meg/6 Meg		119/199/309
Twinhead, Altima, Compudyne 486SX, DX, Tandy 4860	4Meg/16Meg		199 00/858 00
Ultra 486	2Meg, 4Meg, 6Meg		CALL
Zeos 386SX Notebook (not the + version)	2Meg		109 00
Zenith Master Sport 386SX	2Meg	ZA-300-1	114 00
Zenith Master Sport SL, SLE	2Meg	ZA-4-4	119 00
Zenith Super Sport 286, 286E	1Meg	ZA-180-66	99 00
286E, SX	2Meg	ZA-180-64	149 00
SX Alpha	2Meg	ZA-180-86	149 00
SX Beta	2Meg	ZA-180-87	149 00
Zenith Z-Note 325L, LC	2Meg/8Meg	ZA3250-4/5	129 00/419 00
Zenith Z-Note 425LN LNC LNP	4/8/16Meg		269/519/839

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Epson 6000 Action Laser	–	–	–	139	–	–	229	–	–	–	–	-
Epson Action Laser II	–	–	89	–	208	–	–	327	–	–	–	-
Epson 8000	–	–	89	–	208	–	–	327	–			
Epson 1000, 1500	–	–	–	*110**	–	–	*238**	–	*Call*	*IN STOCK		
HP 2 2D–	–	–	–	109	–	–	189	–	–			
HP 3 3D, 3P 2P 2P+	–	–	–	149	–	–	169	–	–	–	–	-
HP 4, 4M, 4Si, 4SiMX, 4P, 4MP	–	–	–	89	–	–	169	–	–	349	–	-
HP 4L	–	–	59	–	–	–	–	–	–	–	–	-
HP 3Si	–	–	69	–	–	–	169	–	–	349	–	-
HP 4Si	–	–	–	89	–	–	175	–	–	349	–	-
HP Design Jet 600, 650	–	–	–	–	–	–	175	–	–	349	–	-
HP Deskjet 500, 500C, 510 550 560	–	55	–	–	–	–	–	–	–	–	–	-
HP Deskjet 1200C, 1200C/P	–	–	–	89	–	–	175	–	–	349	–	-
HP Paintjet XL300	109	–	–	–	–	–	289	–	–	469	837	-
IBM Laser 4019 4019E	–	–	–	–	–	169	–	–	–	–	–	-
IBM Laser 4029 4037	–	–	–	–	–	–	169	–	–	–	–	-
IBM Laser 4039, 4079	–	–	–	99	–	–	169	–	–	350	–	-
NEC 90 290	–	–	–	139	–	–	–	–	–	–	–	-
NEC 95 97	–	–	–	99	–	–	–	–	–	–	–	-
Oki 400	–	–	–	89	–	–	–	–	–	–	–	-
Oki 400 E	–	–	135	189	–	–	–	–	–	–	–	-
Oki 830 840	–	–	–	109	–	–	–	–	–	–	–	-
Packard Bell PB 9500	–	–	–	139	–	–	227	–	–	–	–	-
Packard Bell 9815	–	–	–	160	–	–	299	–	–	–	–	-
Panasonic 4420/4450i	–	–	–	129	–	–	209	–	–	–	–	-
Panasonic 4410/4430	–	–	–	126	–	–	195	–	–	–	–	-
Panasonic 4450	–	–	99	–	–	–	–	–	–	–	–	-
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Panasonic 4440, 5410	–	–	Call	Call	–	–	Call	–	–	–	–	-
Sharp 9400, 9460 9600, 9700E	–	–	109	189	–	–	269	–	–	–	–	-
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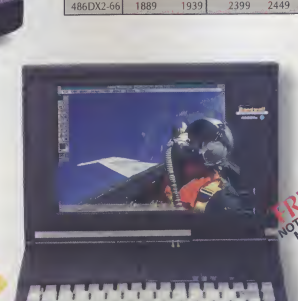

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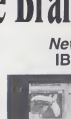

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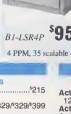

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ACCURA 144+fax144	$155/$169
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ActionNote 4SLC2-50 180MB W/Modem	$1[illegible]
ActionNote 500C 180MB W/Modem	$1[illegible]
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T1960CT 200 MB/320MB	$2899/$3[illegible]
T3400/T3400CT 120MB	$1899/$2[illegible]
T4700CS 200MB/320MB	$3129/$3[illegible]
T4700CT 200MB/320MB	$4579/$5[illegible]
T4800CT 500MB	$5[illegible]
T6600C, C/CD	$6129/$6[illegible]

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TravelMate 4000E WinSX/25 Mono 120MB	$1[illegible]
WinDX2/50 Mono 200MB	$1[illegible]
WinSX/25 Pass. Color w/Modem 120MB	$1[illegible]
WinDX2/40 Pass. Color 200MB	$2[illegible]
WinDX2/50 Dual Scan Color 200MB	$2[illegible]
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- 3.5" 1.44MB Floppy Drive
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- PCI Local Bus Enhanced IDE controller
- 15" Digital Color Monitor with Flat Screen and .28mm dot pitch
- 11-Bay Mid-Tower case
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intel inside

pentium PROCESSOR

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- PCI Local Bus enhanced IDE cotroller
- 15" Digital Color Monitor with Flat Screen and .28mm dot pitch
- 11-Bay Mid-Tower case
- 101-Key enhanced keyboard & Mouse
- MS-DOS & WFW 3.11

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QP5/66W-1	**$2095**
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- 3.5" 1.44MB Floppy Drive
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- ▲ 3-year warranty

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486DX2/50	9.5" active matrix	340MB	$4719
486DX2/50	9.5" active matrix	450MB	$5069
Intel DX4/75	9.5" active matrix	520MB	$5339

$4719

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- ▲ Resolution Enhancement Technology
- ▲ 1-year warranty

LaserJet 4L ..... $6[illegible]

LaserJet 4L

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- ▲ Sharp, 600dpi print-quality
- ▲ 2MB RAM w/Memory Enhancement Technology
- ▲ 1-year warranty

LaserJet 4P $959.99

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- ▲ High quality 3 PPM printing
- ▲ Low cost optional color kit
- ▲ 1-year warranty

DeskJet 310 ..... $299.99
DeskWriter 310 ..... $299.99

DeskJet/DeskWriter 52[illegible]

- ▲ Sharp, 600 x 300 dpi "laser-like" print quality
- ▲ Resolution Enhancement Technology for smooth, crisp text and graphics
- ▲ 3-year warranty

DeskJet 520 ..... $2[illegible]
DeskWriter 520 ..... $2[illegible]

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- ▲ Letter-quality 300dpi color printing
- ▲ 100 Sheet feeder for versatile paper handling
- ▲ 3-year warranty

DeskJet 500C $389.99

DeskJet 310

DeskJet/DeskWriter 560[illegible]

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	486SX/33	Dual scan color	200MB	$2039
	486DX2/40	Dual scan color	200MB	$2289
	486DX2/40	Active color	200MB	$2929
	486DX2/40	Active color	320MB	$3199

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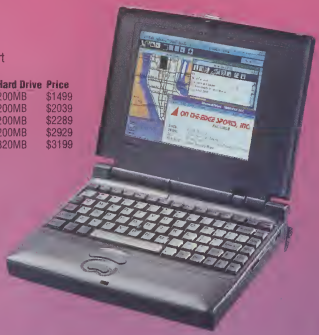

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- ▲ Integrated AccuPoint pointing device

Screen	Price
Monochrome	$1939
Active Color	$3419

Lease for $71/mo.

Desk Station IV

T4700

T4700/T4800

- ▲ 8MB RAM, expandable to 24MB
- ▲ Brilliant 9.5" display with local bus video
- ▲ 2 PCMCIA slots (Type II, Type III)
- ▲ Microsoft Sound System, built-in microphone, audio out port
- ▲ MS-DOS, UltraFont, Indeo video compression software, Windows 3.1(T4700)/Windows for Workgroups 3.11 (T4800)

Model	Processor	Screen	Hard Drive	Price
T4700	486DX2/50	Dual scan color	200MB	$3129
T4700	486DX2/50	Dual scan color	320MB	$3379
T4700	486DX2/50	Active color	200MB	$4549
T4700	486DX2/50	Active color	320MB	$4899
T4800	486DX4/75	Active color	500MB	$5599

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- ▲ Parallel, Serial, PS/2 mouse, VGA monitor, 101-key keyboard ports

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$229.99

Modem	Description	Price
14.4	14.4/14.4-GOLD PCMCIA	$259.99
14.4	14.4/14.4-GOLD PCMCIA	$259.99
14.4	14.4/14.4 PCMCIA	$229.99
9.6FM	96/96 PCMCIA	$179.99
2.4FM	24/96 PCMCIA	$99.99
14.4	14.4/14.4 PCMCIA	$229.99
14.4	14.4/14.4 Pocket	$239.99

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- ▲ 486 processor
- ▲ 4MB RAM, expandable to 20MB
- ▲ 2 Type II PCMCIA slots
- ▲ Removable Hard Drive
- ▲ Removable Screen
- ▲ Pen Upgradable
- ▲ MS-DOS 6.2, Windows 3.1, built-in trackball

Processor	Screen	Hard drive	Price
DX2/40	Active color	120MB	$3439
DX2/40	Active color	250MB	$3849
DX2/50	Monochrome	209MB	$3259*
DX2/50	Active color	209MB	$4199
DX2/50	Active color	340MB	$4599
DX4/75	Active color	340MB	$4999

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UltraLite Versa E

The Versa E notebook series is upgradable to grow with your needs. For ease of upgrade and service, the UltraLite Versa's floppy drive, hard disk drive and memory card slide in and out of their storage slots. If you require extended battery life, slide out the Versa's floppy drive, pop in a second battery, and double your time on the road.

NEC MultiSpin CD-ROM Drives

MultiSpin 3Xp Portable Drive
MultiSpin 3Xi Internal Drive
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NEC

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- ▲ 4MB RAM expandable to 100MB
- ▲ 3.5" floppy drive
- ▲ Local bus graphics
- ▲ MS DOS 6.0, Windows 3.1

Processor	RAM	Hard Drive	Price*
486SX/33	4MB	200MB	$1099
486DX2/50	4MB	200MB	$1249
486DX2/66	4MB	340MB	$1829
486DX2/66	4MB	525MB	$1969
486DX4/100	8MB	340MB	$2299
486DX4/100	8MB	525MB	$2469

*Compaq color monitors start at $299.99

Prolinea $1099.99

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- ▲ 2MB video memory
- ▲ Available with monochrome dual scan color or active matrix color display
- ▲ MS-DOS 6.0, Windows 3.1, trackball

Screen
Monochrome
Dual scan Color
Active matrix color

Lease for $73/mo.

Contura Aero

- ▲ Type II PCMCIA slot
- ▲ Integrated trackball
- ▲ Weighs only 3.5 lbs. (memory) 4.31 lbs. (color)
- ▲ MS-DOS, Windows 3.1

Processor	Display	Hard Drive
486SX25	Mono	120MB
486SX25	Mono	170MB
486SX33	Passive Color	170MB
486SX33	Passive Color	250MB

Lease for $50/mo.

Aero $999

Concerto

- ▲ 4MB RAM expandable to 20MB
- ▲ 9.5" mono display
- ▲ 2 TYPE II and 1 Type III PCMCIA slots
- ▲ Integrated trackball and pen
- ▲ MS-DOS 6.0, Windows 3.1, PenWindows, Pen Tablet
- ▲ PilotPower for Excel

Processor	RAM	Hard Drive
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486SL/25	4MB	170MB
486SL/33	4MB	170MB

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Processor	Hard Drive
486SX/25	120MB
486DX/33	212MB
486DX2/66	212MB

*monitor priced separately

ThinkPad® 500 subnotebook

- ▲ IBM 486SLC2/50 processor
- ▲ 4MB RAM exp. to 12MB
- ▲ 170MB hard drive
- ▲ 7.4" VGA monochrome display
- ▲ Type II PCMCIA slot
- ▲ TrackPoint II integrated pointing device
- ▲ 3.5" external floppy drive
- ▲ NiMH battery, AC adapter
- ▲ Weighs only 3.8 lbs. (w/battery)
- ▲ IBM DOS 6.1, Prodigy

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- ▲ TrackPoint II integrated pointing device
- ▲ IBM DOS 6.3, Windows 3.1, Lotus cc:Mail, Organizer, ScreenCam, Official Airline Guide FlightDisk, CoSessions Host, Prodigy, America Online, and FaxWorks 3.0
- ▲ Port Replicator and Docking Station available

Screen	Hard Drive
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Monochrome	340MB
Passive Color	170MB
Passive Color	340MB
Active Color	170MB
Active Color	340MB

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video RAM
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	RAM	Hard Drive	Price
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486 DX/33W	8MB	270MB	$1369
486 DX/33W	4MB	170MB	$1249
486 DX2/66W	8MB	270MB	$1539
486 DX2/66W	8MB	270MB	$1889
486 DX4/100W	8MB	540MB	$2269
486 DX4/100W	8MB	270MB	$2299
486 DX4/100W	8MB	540MB	$2599

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4 8MB RAM exp. to 64MB
mat/170/340MB hard drive
accelerated local bus graphics

	Hard Drive	Price
	Optional	$1539
486 DX/33W	170MB	$1799
486 DX/33W	340MB	$2279

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Bravo NB

- ▲ 486SX/33 processor
- ▲ Accelerated local bus graphics
- ▲ PCMCIA Type III slot

Model	Screen	Hard Drive	Price
4/33s 203W	Mono	200MB	$1629
4/33s 203W	Dual Scan	200MB	$2249

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Ascentia 900N

- ▲ 486DX2/50 or 486DX4/75 processor
- ▲ 4MB/8MB RAM exp. to 24MB
- ▲ Large dual scan or active color displays
- ▲ PCMCIA type III slot

Model	Screen	Hard Drive	Price
4/50 Model 253W	9.5" Dual Scan	250MB	$2979
4/50 Model 343W	10.3" Dual Scan	340MB	$3329
4/50 Model 343W	9.5" Active	340MB	$4869
4/75 Model 343W	9.5" Dual Scan	340MB	$3969
4/75 Model 513W	10.4" Active	510MB	$5799

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Ascentia 900 $2979

Texas Instruments

TravelMate 4000M

- ▲ Brilliant color display
- ▲ 16-bit sound card
- ▲ Integrated Pointing device
- ▲ PCMCIA Type III slot

Processor	Screen	Hard Drive	Price
486SX/25	Enhanced Color	120MB	$2349
486SX/25	Active Matrix	120MB	$3179
486DX4/75	Active Matrix	340MB	$4939

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- ▲ Built-in speakers
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TM 4000M $2349

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- ▲ Auto Load/Eject feature

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Processor	Screen	Price
486SX/25	Enhanced Color	$1819
486DX2/40	Enhanced Color	$2399
486DX2/50	Dual Scan	$2729
486DX2/50	Active Matrix	$3299
486DX4/75	8.4" Active Matrix	$3999
486DX4/75	9.5" Active Matrix	$4999

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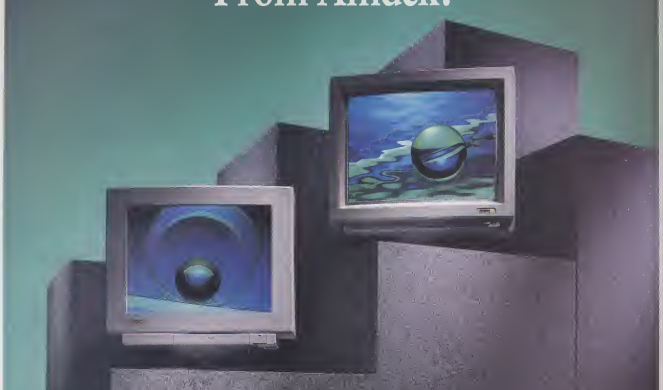

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Screen Size	14"FS VGA Mono	14" SVGA Color	14" SVGA Color	15"FS SVGA Color	17"FSHi-Res Color
Max Resolution	640x480	1024x768	1024x768NI	1280x1024NI	1600x1200NI
Max Refresh Rate	70 Hz	70 Hz	90 Hz	90 Hz	105 Hz
Dot Pitch	N/A	.28mm	.28mm	.28mm	.26mm
110-240 VAC (Auto-sensing)	Yes	Yes	Yes	Yes	Yes
MPR II Compliant	No	No	Yes (as option)	Yes	Yes
Power Management	No	No	No	Yes	Yes (Avail. 3/94)
PIN Cushion Control	No	No	No	Yes	Yes
*Unit 1 Price	$109	$269	$279	$379	$839
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120MB	ST9145AG	16MS	2.5"	[illegible]
260MB	ST3290A	16MS	3.5X1	210
340MB	ST3391A	12MS	3.5	[illegible]
209MB	ST9235AG	16MS	2.5	375
452MB	ST3550A	16MS	3.5X1"	[illegible]
540MB	ST3655A	12MS	3.5	[illegible]
452MB	ST3550N SCSI-2	12MS	3.5X1	445
540MB	ST3655N SCSI-2	11MS	3.5X1	[illegible]
340MB	ST3390N SCSI-2	12MS	3.5X1	[illegible]
1.35GB	ST41600N	12MS	FH	1000
1.2GB	ST11200N SCSI-2	10MS	3.5"	740
1.2GB	ST31200N	0MS	3.5X1"	740
1.2GB	ST41200N	14MS	FH	[illegible]
2.1GB	ST42100N SCSI-2	14MS	FH	1000
2.1GB	ST42400 SCSI-2	11MS	FH	1000
3.6GB	ST43400N SCSI-2	10MS	FH	1000
1.7GB	ST11900N	9MS	3.5"	1140
1.2GB	ST11950N SCSI-2	0MS	3.5	1477
2.1GB	ST12550N SCSI-2	8MS	3.5	1850
2.2GB	ST12400N SCSI-2	12MS	3.5	1000
4.1GB	ST15150N W	8MS	3.5	CALL
9.0GB	ST410800N-W	11MS	FH	CALL

WESTERN DIGITAL

FACTORY NEW 3 YEAR WARRANTY

[illegible]

FUJITSU

FACTORY NEW 5 YEAR WARRANTY

520MB	M2624T	12MS	3.5	[illegible]
2GB	M2694ESA	10MS	3.5	740
2.1GB	M2645	12MS	FH	1000

Maxtor

FACTORY NEW 2 YEAR WARRANTY

130MB	7131A	14MS	3.5X1	179
170MB	7171A	13MS	3.5X1	190
272MB	7273A	12MS	3.5X1	240
340MB	7345A	10MS	3.5	250
540MB	7546A	10MS	3.5X1	[illegible]
540MB	MXT540A	8.5MS	3.5	445
272MB	72736	15MS	3.5X1	CALL
260MB	1280S	16MS	3.5X1	[illegible]
345MB	7345S SCSI-2	12MS	3.5	310
340MB	MXT540S	8MS	3.5X1	[illegible]
1.2GB	MXT1280 SCSI-2	8MS	3.5	1190

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170MB	LPS170A	17MS	3.5X1	190
340MB	LPS340A	10MS	3.5X1	[illegible]
540MB	LPS540A	10MS	3.5X1	[illegible]
121MB	ELS127S	17ms	3.5X1	100
170MB	LPS170S	17MS	3.5X1	190
540MB	LPS340S	10MS	3.5X1	[illegible]
540MB	LPS540S SCSI-2	10MS	3.5X1	[illegible]
1.0GB	P1000S SCSI-2	10MS	3.5X1	740
1.2GB	P1225S SCSI-2	10MS	3.5	[illegible]
1.8GB	P1800S SCSI-2	10MS	3.5	CALL

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170MB	CFA170A	17MS	3.5X1	$179
210MB	CFS210A	12MS	3.5X1	190
340MB	CFA340S	10MS	3.5X1	240
420MB	CFS420A	10MS	3.5X1	275
540MB	CFA540A	10MS	3.5X1	[illegible]

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1MB X 9-80NS 3 CHIP SIMM	39	1MB X 8-80NS SIMM	41	256K X 9-70NS SIPP	20
1MB X 9-80NS 9 CHIP SIMM	44	1MB X 8-70NS SIMM	42	256K X 9-60NS SIPP	23
1MB X 9-70NS 3 CHIP SIMM	40	4MB X 8-80NS SIMM	150	256 X 36 – 1MB	50
1MB X 9-70NS 9 CHIP SIMM	45	4MB X 8-70NS SIMM	150	512 X 36 – 2MB	85
1MB X 9-60NS 3 CHIP SIMM	42	1MB X 9-100NS SIPP	43	1 X 36 – 4MB	160
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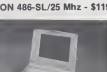

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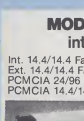

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15" MultiSync 4FGe CMNEC4FGa ... 679
17" MultiSync 5FGa CMNEC5FGE 1,079
21" MultiSync 6FG CMNEC6FGP ... 2,599

MAG

15" MAG Eco CMDX15 ... 399
17" MAG Eco CMDX17 ... 699

UPS

APC

Surga Arrast ... $18
Backup-UPS 600. ... 259
Beckup-UPS 1250 ... 499
Smart-UPS 400 ... 289
Smart-UPS 600 ... 349
Smart-UPS 900 ... 559
Smart-UPS 1250 ... 689
Smart-UPS 2000 ... 1,169

UPSONIC

PC Might 25 ... $89
PC Might 35 w/Upsaver software ... 149
PC Might 55 w/Upsavar software ... 239

TRIPP LITE

Stik-6 ... $19
Isobar 6 outlat ... 49
CCI6 Plus ... 69
BC 600LAN, 600VA, 4 outlets, LAN port.... 259
BC 900LAN, 900VA, 4 outlets, LAN port. .. 369
BC 1250LAN, 1250VA, 4 outlets, LAN port ... 469
Omni 135VALAN ... 729

Double speed!

CD-RDM DRIVES

CHINON

Model CDS535
Bara ... $359 Kit ... $429

NEC

Model 3xl Internal
Bare ... $449 Kit ... $519
Model 3xe External
Bara ... $559 Kit ... $619
Model 4x Extarnal
Bara ... $999

Talon

Talon Bara 320ms/300KB ... $159
Talon DS-200 245ms/330KB ... 349
Mitsumi Bara ... 179

PLEXTOR

Model DM-3028
Internal bara .... $289 Kit ... $299
Externel bara .. 379 w/controllar 409

TOSHIBA

Model 3401
Bara ... $359 Kit ... $429

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CREATIVE

Sound Blester Pro Daluxa. $89
Sound Blaster MIDI Kit ... 59
Sound Blaster 16 Multi-CD. ... 169
Sound Blaster 16CD ASP ... 209
Sound Blaster 16 SCSI ... 199
Sound Blastar Daluxa ... 69
Sound Blaster 16 SCSI ASP ... 219
Sound Blaster 16 Besic ... 119
Sound Blastar Pro Deluxe 8 Bit ... 89
SBS3ØØ Yamaha Speakar Set ... 99
Video Spigot for Windows ... 249
Video Blastar ... 349
Wava Blaster Board ... 189

Media Vision

Pro AudioSpectrum 16 SoundCard.. $129
ProAudio Studio 16 w/mic ... 169
ProMovie Spactrum ... 309
RENQ Extarnal CD-RQM Drive ... 289
Family Daluxa MM Kit ... 339
Super Deluxa MM Kit ... 419
Premium Deluxa MM Kit ... 518
Pro Daluxe MM Kit ... 719

REVEAL

MultimediaFX-01 ... $299
MultimediaFX-02 - Int drive doubla spaad, 300KB transfar, 16 Bit sound, spaakars, microphona and 8 titles $349
MultimediaFX-04 - Int driva double spaed, 300KB transfer, 16 Bit sound, speakars, microphone and 15 titlas $479
MultimedieFX-08 - Int drive double spaad, 300KB transfer, 16 Bit sound, speakers, microphona and 34 titles $599

REMDVABLE STDRAGE

FUJITSU

Fujitsu Int MQ 230MB (PC) ... $1,099
Fujitsu DynaMQ (Mac or PC).. ... 899
Bernoulli 9Ø Pro Internal Kit ... 399

Barnoulli Multidisk Inelder 150 IDE
210MB Kit BEMD21ØK ... $399
505MB Kit BEMD5Ø5K. ... 599
1050MB Kit BEMD1Ø5ØK ... 799

PRINTERS

Canon

BJ-10SX CNBJ1ØSXW ... $249
BJ-200E Bubble Jat CNBJ2ØØE ... 289
BJ-230 CNBJ23Ø ... 399
BJC-600 Color CNBJC6ØØ ... 589
LASER LBP 43Ø CNLBP43Ø ... 589
LASER LBP 86Ø CNLBP86Ø ... 1,389

EPSON

Epson LX 300 ... $169
Epson LQ-570+ ... 239
Epson LQ-870 ... 439
Epson LQ-1Ø7Ø+ ... 359
Epson LQ-2550 Color ... 879
Epson DFX 5000+ ... 1,379
Epson Stylus 800 ... 318
Epson Stylus 1000 ... 445
Epson Action Printar 3260 ... 199

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HP DeskJat 500C HPDJ5ØØC ... 369
HP DeskJet 56ØC HPDJ56ØC ... 539
HP DeskJet 520 HPDJ52Ø ... 269
HP LaserJet 4L ... 649
HP LaserJet 4P ... 985

LEXMARK by IBM

2380 LEX238ØØ2 ... $319
2381 LEX2381ØØ2 ... 449
2390 LEX239ØØØ2 ... 329
2391 LEX2391ØØ2 ... 449
4Ø37 5E Laser LEX37Ø5E ... 649
4Ø39 10R LEX4Ø391ØR ... 1,339
4Ø39 12R plus LEX4O3912R ... 1,499
4Ø76 Exec Jet II LEX4Ø76ØØ1 ... 279

NEC

P32ØØ 24 Pin NCMDL32ØØ ... $229
P62ØØ 24 Pin NCMDL62ØØ ... 424
Silentwriter 1Ø97 NCMDL1Ø97 ... 1,429

OKIDATA

OL41ØE Lasar ... $629
OL81Ø Lasar ... 929
OL85Ø Laser ... 1,239
ML38Ø Dot Matrix ... 219
ML184 Dot Matrix ... 229
ML32Ø Dot Matrix ... 298
ML395C Dot Matrix ... 1,019
ML521 Dot Matrix ... 488
QL 83Ø+ Dot Matrix ... 1,079

Panasonic

KX-P2Ø23 Dot Matrix ... 195
KX-P2124 Dot Matrix ... 315
KX-P3624 Dot Matrix ... 409
KX-P44ØØ SideWriter ... 599
KX-P45ØØ SidaWritar ... 899

TEXAS INSTRUMENTS

TI MicroWriter LED 5ppm 512K ... $499
TI MicroWriter PS23 LED 5ppm 2MB ... 679
TI MicroWriter PS65 LED 5ppm 2MB ... 929
TI Microlaser Pro PS23 ... 1,349
TI Microlaser Pro PS65 ... 1,529
TI MicroMarc ... 279
TI MicroMarc color ... 309

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COLORADO MEMORY SYSTEMS

250MB COJUMBQ25Ø ... $169
120MB COJUMBO ... 99
Trakker 250MB CØJT20 ... 329
Trakker 120MB CØJT1Ø ... 219

CONNER

TapeStor 250MB Internal A25Ø ... $149
TapaStor 250MB Ext Par A25ØEP 339

EXABYTE

8mm 5.0Gig Modal 85Ø5 ... $2,299
8mm 2.2Gig Model 82Ø5 ... 1,599
8mm Tape Cartridge ... 16

IOMEGA

Iomaga Tape250 Internal Basic ... $189
Iomaga Tapa250 Insider Half-height ... 189
Iomega Tape250 PC Powarad Ext ... 319

Talon 250MB Intarnal

w/2 unformattad tapes TBTA25ØIK ... $179
w/5 formatted tapes TBTA25ØIK5 ... 229
Parallal Port w/ tape TBTAJT2Ø ... 319

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4mm DAT 2GB Int. 16 Bit Kit ... $899
4mm DAT 4GB 3200 Int 16 Bit Kit 1,049
4mm DAT 4GB 3200 Ext 16 Bit Kit 1,199
4mm DAT 8GB 3400 Int 16 Bit Kit 2,399

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Capacity	Interface	Model	Access	FF/Height	Bare	Ki
WESTERN DIGITAL						
210MB	IDE	WD121ØA	12ms	3 5" 1"H	199	$219
270MB	IDE	WD127ØA	12ms	3.5" 1"H	229	249
250MB	IDE	WD225OA	12ms	3 5" 1"H	219	239
340MB	IDE	WD234ØA	12ms	3.5" 1"H	228	249
420MB	IDE	WD242ØA	12ms	3 5" 1"H	279	299
540MB	IDE	WD254ØA	12ms	3 5" 1"H	348	369
730MB	IDE	WD27OØA	12ms	3 5" 1"H	489	489
1080MB	IDE	WD31ØØØA	10ms	3.5" 1"H	679	699
CONNER						
213MB	IDE	CFS21ØA	14ms	3.5" 1"H	$219	$239
340MB	IDE	CFA34ØA	13ms	3.5" 1"H	309	329
340MB	SCSI	CFA34ØS	13ms	3.5" 1"H	329	429
426MB	IDE	CFS42ØA	14ms	3.5" 1"H	289	309
540MB	SCSI	CFA54ØS	10ms	3.5" 1"H	678	779
1060MB	SCSI	CFP1Ø6ØS	8 5ms	3.5" 1"H	748	789
FUJITSU						
1080MB	SCSI	FJ2694S	10ms	3 5" HH	$799	$899
Maxtor						
290MB	SCSI	MX7280S	15ms	3.5" 1"H	$289	388
340MB	IDE	MX7345A	12ms	3.5" HH	289	309
340MB	SCSI	MX7345S	12ms	3.5" HH	349	449
MICROPOLIS						
1050MB	SCSI	MC4110S	8.5ms	3 5" HH	$739	839
1050MB	SCSI	MC2210AV	10ms	3 5" HH	829	929
1626MB	IDE	MC2217A	10ms	3.5" HH	968	989
1890MB	SCSI	MC2217AV	10ms	3.5" HH	1,039	1,139
1750MB	SCSI	MC2217S	10ms	3 5" HH	969	1,069
2100MB	SCSI	MC1926	11ms	5.25" FH	1,399	1,499
3000MB	SCSI	MC1936	11ms	5 25" FH	1999	2,099
3000MB	SCSI	MC1936AV	10ms	5 25" FH	2,149	2,249
9100MB	SCSI	MC1991	10ms	5 35" FH	4,059	4,159
Quantum						
170MB	IDE	QULPS17ØA	14ms	3 5" 1"H	$199	$219
170MB	SCSI	QULPS17ØS	14ms	3.5" 1"H	199	299
270MB	IDE	QULPS27ØA	12ms	3 5" 1"H	239	259
270MB	SCSI	QULPS27ØS	12ms	3 5" 1"H	269	369
340MB	IDE	QULPS34ØA	12ms	3.5" 1"H	279	299
340MB	SCSI	QULPS34ØS	12ms	3.5" 1"H	299	399
540MB	IDE	QULPS54ØA	12ms	3 5" 1"H	389	409
540MB	SCSI	QULPS54ØS	12ms	3.5" 1"H	399	499
1080MB	SCSI	QUEM1Ø8ØS	9ms	3.5" 1"H	739	839
1225MB	SCSI	QUPD1225S	10ms	3.5" HH	949	1,049
1800MB	SCSI	QUPD18ØØS	10ms	3.5" HH	839	1,039
2100MB	SCSI	QUEM21ØØS	9 5ms	3.5" HH	1,449	1,549
Seagate						
130MB	IDE	ST3145A	15ms	3 5" 1"H	$189	$209
210MB	IDE	ST3243A	14ms	3.5" 1"H	199	219
260MB	IDE	ST329ØA	16ms	3.5" 1"H	209	229
340MB	SCSI	ST339ØN	11ms	5.25" FH	379	479
340MB	IDE	ST3391A	12ms	3.5" 1"H	249	269
420MB	IDE	ST3491A	14ms	3.5" 1"H	279	299
452MB	IDE	ST355ØA	12ms	3.5" 1"H	299	319
452MB	SCSI	ST355ØN	12ms	3 5" 1"H	409	509
528MB	IDE	ST3655A	12ms	3.5" 1"H	369	389
540MB	SCSI	ST3655N	12ms	3 5" 1"H	409	509
545MB	IDE/SCSI	ST566ØA/N	12ms	3 5" 1"H	379/419	399/519
1050MB	SCSI	ST312ØØN	9 5ms	3 5" 1"H	738	839
1700MB	SCSI	ST1195ØN	8ms	3 5" 1"H	1,499	1,599
1700MB	SCSI	ST119QØN	9ms	3 5" HH	1,099	1,199
2100MB	SCSI	ST124ØØN	10 5ms	3.5" HH	1,449	1,549
2145MB	SCSI	ST1255ØN	8ms	3.5" HH	1,639	1,739
2900MB	SCSI	ST434ØØN	11ms	5 25" FH	1,999	2,099
4294MB	SCSI	ST1515ØN	8ms	3 5" HH	2,399	2,499
9080MB	SCSI	ST41Ø8ØØN	11ms	5,25" FH	3,995	4,095

NOTEBOOK CDMPUTERS

NEC

Ultralite Versa E 486 DX2 40 or 50MHz, 4MB RAM/Exp to 20MB, 2 type II PCMCIA, MS-DOS 6 2, Windows 3 1, built-in trackball
Color 120MB HD 40MHz NCV44Ø1511 ... 3,819
Color 250MB HD 40MHz NCV44Ø1531 ... 4,229
Color 209MB HD 50MHz NCV45Ø1521 ... 4,449
Color 340MB HD 50MHz NCV45Ø1541 ... 4,899
Color 340MB HD DX4/75 ... 5,199

TEXAS INSTRUMENTS

E-Series
200MB HD DX2/40 Color ... 2,399
200MB HD DX2/50 Color ... 2,729
200MB HD DX2/50 Active Color ... 3,299
340MB HD DX4/75 Active Color ... 3,999
455MB HD DX4/75 Active Color ... 4,995
M-Series Multimedia
120MB HD SX/25 Mono ... 1,999
120MB HD SX/25 Color ... 2,349
200MB HD SX/25 Active Color ... 3,179
340MB HD DX4/75 Active Color ... 4,899
Portable CD-ROM Docking Station ... 779

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TI1910
486SX-33MHz, 4MB RAM/Exp to 20MB PCMCIA Slot
200MB Monochrome ... $1,489
200MB Color Dual Scan ... 2,039
T1950
486DX2-40MHz, 4MB RAM/Exp to 20MB PCMCIA Slot
200MB, Color Dual Scan ... $2,679
200MB, Color, Activa ... 2,929
320MB, Color, Activa ... 3,179
T3400 Portege
120MB Activa Color ... $3,349
120MB Monochrome ... 1,899
T4700
200MB Color Dual Scan ... 3,159
320MB Dual Color Scan ... 3,399
200MB Active Color ... 4,799
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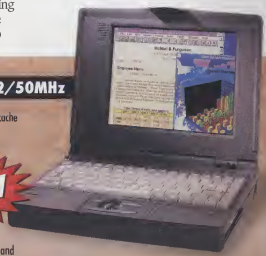

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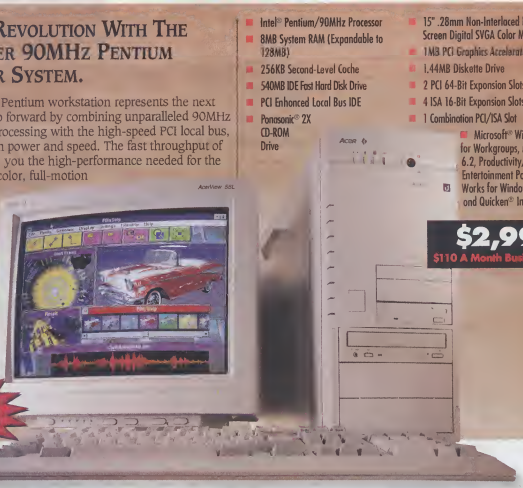

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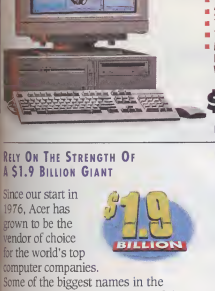

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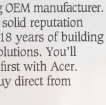

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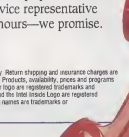

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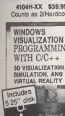

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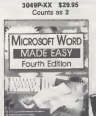

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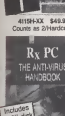

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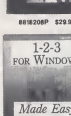

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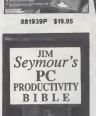

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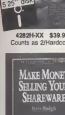

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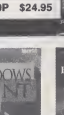

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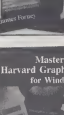

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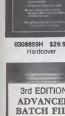

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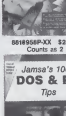

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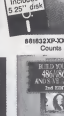

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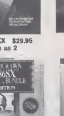

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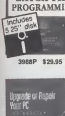

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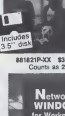

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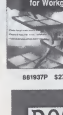

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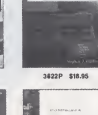

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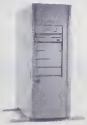

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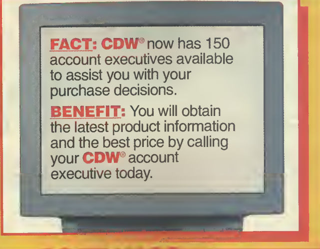

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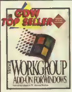

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Void after November 30, 1994

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Please answer questions below:

1. **Where do you use your computer?** (Check one only)
   A ☐ Home B ☐ Business C ☐ Both
2. **What kinds of computers do you use?** (Check all that apply)
   D ☐ IBM/Compatible Laptop E ☐ IBM/Compatible Desktop E ☐ MAC
3. **Do you plan to buy any of the hardware or software mentioned below in the next three months?** (Check all that apply)

HARDWARE
G ☐ PC
H ☐ MAC
I ☐ Laptop
J ☐ Printer
K ☐ Monitor
L ☐ Disk/Tape Back-up
M ☐ Add-in Board
N ☐ Modem
D ☐ Input Device
P ☐ Local Area Network

SOFTWARE
R ☐ Accounting
S ☐ Spreadsheet
S ☐ Personal Finance
T ☐ Desktop Publishing
U ☐ Word Processor
V ☐ Database Manager
W ☐ Graphics
X ☐ Utility
Y ☐ Communications
Z ☐ Windows/Multi-tasking
1 ☐ Programming Language Compiler
2 ☐ Integrated/Multifunction
3 ☐ CAD

4. **From which of the following sources do you purchase personal computer products?** (Check all that apply)
   4 ☐ Specialty Computer Retail Stores
   5 ☐ Mail Order Firms
   6 ☐ Direct From Manufacturers
   7 ☐ Other

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5. ☐ Please send me a one-year (12 issue) subscription to PC/Computing for $18.94 (U.S. price). all other countries add $16.00 for additional postage.

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P. ☐ Local Area Network

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R. ☐ Spreadsheet
S. ☐ Personal Finance
T. ☐ Desktop Publishing
U. ☐ Word Processor
V. ☐ Database Manager
W. ☐ Graphics
X. ☐ Utility
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4039 12R PLUS 1947.07
WinWriter 600 1177.39

NEC
SuperScript 610 477.78
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340MB SCSI 767.42

Seagate
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14.4 EXT 139.90

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Courier V.34 HEAD STAL STD INT 501.05
DUAL STD TERBO EXT W/FAX 569.42
Courier V.34 HEAD STAL STD EXT 562.44

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ACCURA 96 + FAX INT 139.98
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ACCURA 14.4 + FAX INT 148.00
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BOCA 14.4K DATA/FAX 209.45
DATARACE 14.4K WFAX 238.34
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DATARACE 3600 CELL 134.26
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COMPAQ CONTURA 486 8MB	CALL!
COMPAQ CONTURA 4/25	CALL!
COMPAQ LTE 425C 8MB	CALL!
COMPAQ LTE 486/25C 8MB	CALL!
HP DESKJET 500 & 500C 256KB	CALL!
HP LASERJETS ALL MODELS	CALL!
HP PAINTJET XL300 4MB	CALL!
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Fill 'er Up

MidWest Micro has never forgotten what full service is all about. For more than a decade, we've been attending to you with premium products, the lowest prices and unbeatable customer service. And even though we hate to toot our own horn, we're proud of the awards we've driven away with over the years – including 14 Computer Shopper Best Buy Awards and PC Computing's Five Star Rating for outstanding service and support.

The Real Warranty – Not Just A Lot Of Hot Air

Tired of computer companies with flat, tread-bare warranties? Check out MidWest Micro's **Real Warranty** with three full years of bumper-to-bumper system coverage. The first company to offer such an extensive warranty, MidWest Micro completely covers your Elite Desktop System and all its components – even the monitor and hard drive.

Squeaky-Clean Guarantee

When you buy from MidWest Micro, you'll feel confident in your decision. That's because in addition to the Real Warranty, your Elite System is backed by a **30-Day Money-Back Guarantee.** When it comes to customer satisfaction, we don't miss a spot. And if your system ever *does* need a tune up, our **Immediate Parts Replacement Policy** will fix you right up.

Phone-Line Freeze Up?

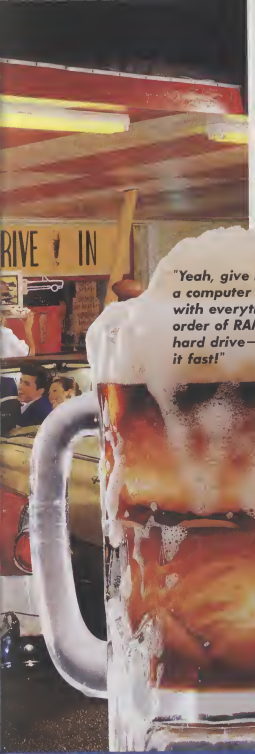
Don't be afraid to call and ask for help – it's easy! MidWest Micro provides **Lifetime Toll-Free Technical Support** with your Elite purchases. Qualified technicians are standing by to answer all of your questions quickly and accurately. And for round-the-clock access to the latest drivers and utilities, pull up to our **On-Line Bulletin Board Service** and simply download the information you need.

We'll Pump You Up

You don't have to go back in time to get this kind of attention. At MidWest Micro, we'll even custom configure your Elite System with your choice of peripherals and one of five attractive case designs. Call today and take a nostalgia trip with MidWest Micro – your one-stop location for the latest technology and good old-fashioned service.

Circle 237 on reader service card.

Hot, Fast And To Order



Have it Your Way

Get ready for the hottest items on MidWest Micro's menu. Fast, fresh and topped with features, these Intel-based Elite Systems are just what you've been craving. And since everyone has different tastes, we'll configure your system the way *you* like it. Want extra RAM, a double-speed CD-ROM drive or a sound card?...no problem. Just place your order and we'll bring it right out to you.

Tonight's Special...

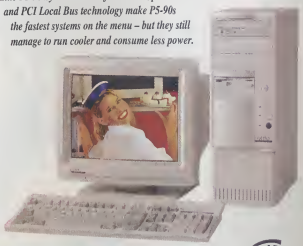
Feast your eyes on Elite's Pentium PCI Systems. These high-tech dishes feature sizzling processors and mouth-watering PCI bus architecture. And once the gang sees MidWest Micro's low prices on Pentium Systems, they'll never order "the usual" again. With PCI (Peripheral Component Interconnect) technology, your information is cruisin' on a fast 32-bit data path – perfect for full-motion video and peripheral expansion. Add a 60, 66 or 90 MHz Intel Pentium processor, and you've got more than enough power to go around.

Hungry For Value?

Try an Elite Slimline Value System. Each of these affordable Elites is served in an attractive Slimline case that conserves desktop space. You won't find a larger helping of features at such a low price. Our Elite VESA and PCI Systems will also whet your appetite with advanced local bus technology and plenty of high-tech toppings. Talk about fast food, these systems reach clock-doubling speeds up to 66 MHz! MidWest Micro is *your* high-performance hangout – call (or honk twice) for an Intel-based Elite System today.

"Yeah, give me a computer system with everything, a side order of RAM, a large hard drive—and make it fast!"

If you think a faster system that conserves energy is a tall order, you haven't seen MidWest Micro's Elite P5-90 Systems. Powerful 90 MHz processors and PCI Local Bus technology make P5-90s the fastest systems on the menu – but they still manage to run cooler and consume less power.



3 YEAR WARRANTY

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pentium PROCESSOR

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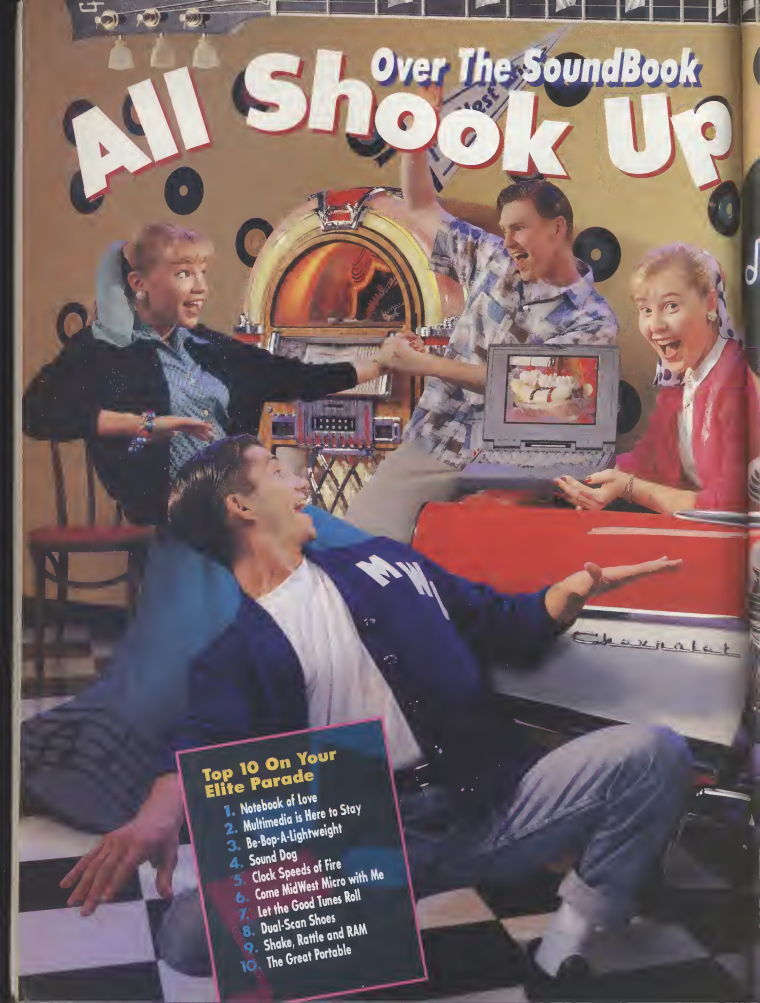
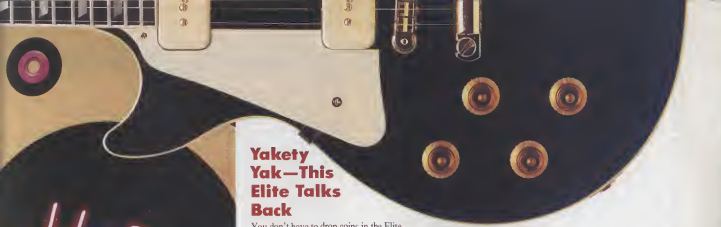
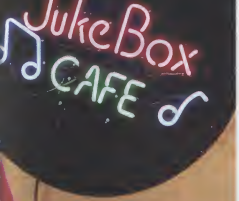
Circle 271 on reader service card.

AD#M08


Over The SoundBook
All Shook Up
Top 10 On Your Elite Parade
1. Notebook of Love
2. Multimedia is Here to Stay
3. Be-Bop-A-Lightweight
4. Sound Dog
5. Clock Speeds of Fire
6. Come MidWest Micro with Me
7. Let the Good Tunes Roll
8. Dual-Scan Shoes
9. Shake, Rattle and RAM
10. The Great Portable





Yakety Yak—This Elite Talks Back

You don't have to drop coins in the Elite SoundBook to hear what it has to say – just listen. Complete with a built-in microphone and stereo speakers, this high-performance notebook has enough audio power to wake up little Susie. It even comes with software that lets you record, store and playback voices, sounds or music. And since it features a powerful Intel processor, Advanced Power Management and lots of RAM-a-lam-a-ding-dong, Elite's mini jukebox is sure to be a hit at your next sock hop.

Whole Lotta Choices Goin' On

MidWest Micro knows that no two be-boppers are alike. That's why we offer a variety of SoundBook configurations with different screens, processors and hard drives. All you have to do is make your selection – maybe you'd like to hear E-7, a 486SX-33 monochrome SoundBook guaranteed to start your saddle shoes tapping. Or you may prefer J-5, a dual-scan DX4-100 with a 520 Mb hard drive and processing speeds faster than Elvis' Pelvis. Whether you're in the mood to Stroll, Jitterbug or La Bamba, we've got a SoundBook that's playing your song.

Video That Knocks Your Socks Off

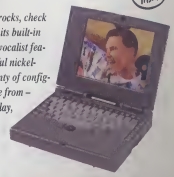
The Elite SoundBook is also topping the charts with video performances in monochrome, dual-scan and active-matrix screens. For a little black and white with your rock and roll, try a monochrome SoundBook with crisp resolutions that score big on the Bandstand. Also a Billboard favorite, the large 10.3" dual-scan version uses affordable dual-scan color technology for less shadowing and sharper images. Choose an active-matrix screen, and you're sure to find your thrill with faster response times and a spectrum of vivid colors – from blues bluer than Blueberry Hill to purples fit for a flying people-eater. For audio and video in perfect harmony, call MidWest Micro and request your SoundBook today.

Not Quite Ready To Rock?

If you're looking for something with a little less volume, Elite's 486SX SubNote may be for you. Even though it can't play the top ten, this 3.9 lb. computer has plenty of other hit features such as a nickel-metal hydride battery, Advanced Power Management and your choice of dual-scan or monochrome screens.

intel inside

For portable computing that really rocks, check out the Elite SoundBook. Aside from its built-in microphone and speakers, this tiny vocalist features Local Bus video, a powerful nickel-metal hydride battery and plenty of configuration elements to choose from – including a 10.3" display, 520 Mb hard drive and processing speeds up to 100 MHz.



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Circle 273 on reader service card.

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- 3 ISA, 2 PCI & 1 PCI/ISA Slots
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- 8-Bay Mini-Tower Case
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- High-Resolution Mouse
- MS-DOS 6.2 and WFW 3.11
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SX-33 $1199
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DX-33 $1379
#008604

DX2-50 $1379
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- 32-Bit VESA Local Bus IDE
- Double Speed CD-ROM Drive
- Internal 14.4 S/R Fax Modem
- 3.5" Disk Drive
- 15" SVGA .28 N/I Multi-Scan Color Monitor with Hitachi CRT
- 8-Bay Mini-Tower Case
- 5 ISA & 3 VESA/ISA Slots
- 101-Key Enhanced Keyboard
- High-Resolution Mouse
- MS-DOS 6.2 and WFW 3.11
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DX2-50 $1779
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- Double Speed CD-ROM Drive
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- 8-Bay Mini-Tower Case
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- MS Mouse
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- MS-DOS® 6.2
- The Real 3 Year Warranty

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- 32-Bit Local Bus IDE
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- Pro Audio 16 Sound Card
- Digital Quality, Compact Speakers
- 9624 Internal S/R Fax Modem
- 3.5" Disk Drive
- 14" SVGA .28 N/I Color Monitor with Hitachi CRT
- Slimline Case
- 4 ISA & 1 VESA/ISA Slots
- 101-Key Enhanced Keyboard
- MS Mouse
- MS-DOS 6.2 and WFW 3.11
- EPA Energy Star Compliant
- The Real 3 Year Warranty

HOME PC $1999
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- 32-Bit Local Bus IDE
- Double Speed CD-ROM Drive
- Microsoft 3 Disk CD-ROM Software Library – Encarta", Works" & Money"
- Pro Audio 16 Sound Card
- Digital Quality, Compact Speakers
- 14.4 Internal S/R Fax Modem
- 3.5" Disk Drive
- 15" SVGA .28 N/I Multi-Scan Color Monitor with Hitachi CRT
- Slimline Case
- 4 ISA & 1 VESA/ISA Slots
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- Advanced Power Management with SMI
- One Parallel & One Serial Port
- External VGA & Keyboard Port
- MS-DOS™ 6.2 & WFW™ 3.11
- Lotus Organizer™
- Weight: Mono – 6.2 lbs. Color – 6.7 lbs.
- Carrying Case
- One Year Manufacturer's Warranty

intel inside

*** Ask your MidWest Micro sales representative about additional hard drive, screen and processor options.**

Dual Scan Color SoundBook

486SX-33 with 260 Mb HDD
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DX2-50 with 340 Mb HDD
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DX2-66 with 520 Mb HDD
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DX4-75 with 340 Mb HDD & 8 Mb of RAM
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486DX-33 with 260 Mb HDD
#007335 **$1699**

DX2-50 with 340 Mb HDD
#007336 **$1799**

DX2-66 with 340 Mb HDD & 8 Mb of RAM
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Active Matrix SoundBook

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DX4-75 with 520 Mb HDD & 8 Mb of RAM
#007338 **$3799**

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#007339 **$3999**

DX4-100 with 520 Mb HDD & 20 Mb of RAM
#008005 **$4499**

DX4-100 with 520 Mb HDD, 20 Mb of RAM, PCMCIA 14.4 Fax Modem & PCMCIA Ethernet Adapter
#008006 **$4999**

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8 Mb RAM Card	#005977	$469
16 Mb RAM Card	#005978	CALL
Car Adapter	#005979	$ 59
Mobile Max PCMCIA 105 Mb HDD	#004801	$449
PCMCIA 9624 Fax Modem	#001722	$139
PCMCIA 14.4 Fax Modem	#001812	$179
PCMCIA Ethernet Adapter	#001832	$139

Elite 486SX SubNote

- Intel 486SX SL-Enhanced Processor
- 4 Mb RAM (expands to 12 Mb)
- 9.5" Mono or Dual-Scan VGA Display
- Turbo Bus Accelerated Video
- 3.5" External Disk Drive
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- One Type II PCMCIA Slot
- Built-in Trackball
- NiMH Battery & AC Adapter
- Advanced Power Management with SMM
- One Parallel & One Serial Port
- External VGA & Keyboard Port
- MS-DOS 6.2
- Weight: 3.9 lbs.
- Carrying Case
- One Year Manufacturer's Warranty

Monochrome SubNote

486SX-25 with 260 Mb HDD
#007342 **$1299**

486SX-25 with 340 Mb HDD & PCMCIA 9624 S/R Fax Modem
#007307 **$1499**

Dual Scan Color SubNote

486SX-33 with 260 Mb HDD & WFW 3.11
#007340 **$1899**

486SX-33 with 340 Mb HDD & WFW 3.11
#007341 **$1999**

486SX-33 with 520 Mb HDD, 8 Mb of RAM, WFW 3.11, Lotus Organizer & PCMCIA 14.4 S/R Fax Modem
#008007 **$2499**

Options

4 Mb RAM Card	#005970	$219
8 Mb RAM Card	#005971	$469
Car Adapter	#005972	$ 65
Mobile Max PCMCIA 105 Mb HDD	#004801	$449
PCMCIA 9624 Fax Modem	#001722	$139
PCMCIA 14.4 Fax Modem	#001812	$179
PCMCIA Ethernet Adapter	#001832	$139

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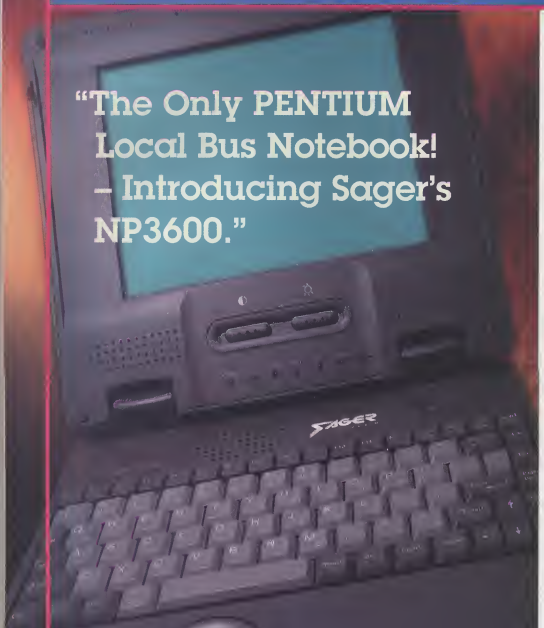
P O W E R F U L P

"The Only PENTIUM Local Bus Notebook! – Introducing Sager's NP3600."



NOW MAXIMUM POWER IS AVAILABLE IN PORTABLES WITH SAGER'S PENTIUM & 486 DX-4 NOTEBOOKS.

With more power than most desktops, these Sager notebooks were developed exclusively for performance-driven notebook users. Sager designed and built these systems with one goal – to give you the performance capabilities and features of the most powerful desktop, in a compact, lightweight notebook. These portable powerpacks feature Pentium performance or 486 DX-4 upgradeability, both Local Bus video and Local Bus IDE, PCMCIA, built-in audio and more. The result is powerful performance at up to 45% faster than any other notebook.

PENTIUM NP3600 CONFIGURATIONS

- Intel Pentium™ 60/66MHz CPU
- 1MB Video RAM
- 32-bit VESA Local Bus Video with Windows Accelerator
- 32-bit Local Bus IDE
- Built-In Audio Chip, Microphone, & Speaker
- 8MB RAM Expandable to 40MB
- Removable 260MB Hard Drive (340, 520MB Optional)
- 3.5" 1.44MB Floppy Drive
- 10.3" Dual Scan or 9.5" Active Matrix VGA Display, CRT, 1024x768 256 Colors
- Simultaneous CRT & LCD Operation
- Extra Large Built-In 25mm Trackball
- 1 Type II & 1 Type III PCMCIA Slots
- 46 Watt NiMH Battery
- 1 16C550 Compatible Serial Port
- 1 Parallel Port with ECP/EPP Support
- Ports for Ext. Keyboard, Ext VGA Monitor & 200 Pin Connector for Docking Station
- Jacks - 1 line in & 1 line out
- 86-Key Keyboard
- Microsoft DOS 6.21
- Carrying Bag & AC/Adapter
- Weight 8.1Sbs. (with Battery)
- 11.14"W x 10.31"D x 2.56"H
- Sager's Umbrella Protection Policy

NP3600 FEATURES

- Intel Pentium™ 64-bit performance
- Super Fast 32-bit VESA Local Bus Video with Windows Accelerator & 1MB Video RAM
- 32-bit Local Bus IDE, improved data transfer rate of up to 45%
- 1 PCMCIA Type III & 1 PCMCIA Type II Slots
- Built-In Audio Chip, Microphone, & Speaker (Now you can record, compress, store and playback voice, sound, and music to disk Soundblaster and Microsoft Windows Sound System compatible)
- VESA Local Bus Power when used with Optional VL-Bus Docking Station
- 46 Watt Extra Large NiMH Battery
- Extra Large Built-In 25mm Trackball
- Large Palm Rest Area for Easy Typing
- Flash ROM for BIOS Upgrade through software
- 2-Hour Quick Charge

NP3600 / NP7500 OPTIONS

VL-Bus Docking Station
Numeric keypad
Car Adapter
PCMCIA Cards (Fax/Modem, Ethernet LAN Adapter, SCSI Adapter & more)

R T A B L E S

486 NP7500 CONFIGURATIONS & FEATURES

- Intel SL enhanced CPU upgradeable to 486DX4 (486SX-DX-DX2-DX4)
- 1MB Video RAM
- Super Fast 32-bit VESA Local Bus Video with Windows Accelerator
- Super Fast 32-bit Local Bus IDE with improved data transfer rate of up to 45%
- Built-in Audio Chip, Microphone, & Speaker (Now you can record, compress, store and playback voice, sound, and music to disk
- Extra Large Capacity NiMH Battery – No Memory Effect and 40%-50% Longer Running/Operating Timespan
- Large 19mm Trackball Centered on Large Palm Rest Area for Easy Typing
- 2 PCMCIA Type I & II or 1 Type III IC Card Slot
- Flash ROM for BIOS Upgrade through software
- 4MB RAM expandable to 36MB
- Removeable 250MB Hard Drive (340, 520MB Optional) offers flexibility, upgradeability and security
- 3.5" 1.44MB Floppy Drive
- 9.5" 640x480, VGA Display 256 Colors or 64 Grays, CRT; 1024x768 256 Colors
- Simultaneous CRT & LCD Operation
- 180° LCD Display Angle Rotation
- Built-in System Management Mode (SMM)
- Ports for 1S, 1P, Ext. keyboard, Ext VGA monitor, & 200 Pin Connector for Docking Station
- Jacks - 1 line in & 1 line out
- 86-Key Keyboard
- Microsoft DOS 6.21
- Carrying Bag & AC/Adapter
- Weight 6 elbs. (with Battery)
- 11.14"W x 9.48"D x 1.95"H
- 2-Hour Quick Charge
- VESA Local Bus Power when used with Optional VL-Bus Docking Station
- Sager's Umbrella Protection Policy

SAGER SYSTEMS

	MONO	COLOR DUAL SCAN	COLOR ACTIVE MATRIX
NP3600/PENTIUM-60		$3295	$4295
NP3600/PENTIUM-66		$3445	$4445
NP7500/486SX-33	$1625	$2125	$3075
NP7500/486DX-33	$1775	$2275	$3225
NP7500/486DX2-66	$1845	$2345	$3295
NP7500/486DX4-100	$2195	$2695	$3645
NP700/486SX-25	$1345	$1825	$2745
NP700/486DX-33	$1495	$1975	$2895
NP700/486DX2-66	$1575	$2055	$2975

486 NP700 CONFIGURATIONS

- 1MB Video Ram
- 4MB RAM expandable to 16MB
- Removable 120MB Hard Drive (250, 340, 520MB Optional)
- 3.5" 1.44MB Floppy Drive
- 9.5" 640x480, VGA Display 256 Colors or 64 Grays Shades
- Large Built-In 16mm Trackball (Can be replaced with another module)
- PCMCIA Type I & II Slot
- Ports for 1S, 1P, Ext keyboard/keypad, VGA monitor & AT/Bus for expansion box
- 85-Key Keyboard
- Nickel Metal-Hydride battery
- Microsoft DOS 6.21
- Carrying Bag & AC/Adapter
- Weight 5.5lbs. with Battery
- 11.4"W x 8.6"D x 1.65"H
- Sager's Umbrella Protection Policy

NP700 FEATURES

- Module Pack Area. (Optional) Fax/Modem, PS/2 Mouse+COM 2, Audio
- PCMCIA Slot
- Intel 486 Upgradeable CPU (486SX >486DX >486DX2)
- 180° LCD Display Angle Rotation
- 2-Hour Quick Charge
- NiMH Battery: No memory effect, Longer Battery Life
- External Battery Pack. (Optional) Doubles Running Hours Screws Into Bottom Back of Notebook Raising & Angling Keyboard for Easy Typing

NP700 OPTIONS

FAX/Modem Module
PS/2 Mouse + COM 2 Port Module
Audio Module
Internal/External Battery Pack
Numeric Keypad
Car Adapter
Expansion Box
PCMCIA Cards (Fax/Modem, Ethernet LAN Adapter, SCSI Adapter & more)

SAGER'S UMBRELLA PROTECTION POLICY

- **Two-Way 30-Day Money-Back Guarantee.** If the equipment does not work as promised, we'll pay you your base price PLUS all shipping charges both ways.
- **48-hour Repair Promise.** For the first 3[illegible] days, we'll repair or replace your computer within 48[illegible] or we'll pay [illegible] per day [illegible] up to [illegible] itself.
- **72-hour Repair Promise.** For the [illegible] days, we'll pay [illegible] if [illegible] or replace your computer we'll pay up to [illegible] of shipping charges both ways.
- **1-Year Parts and Labor Limited Warranty**
- **Lifetime Toll-Free Technical Support.**

Umbrella Policy Applies to Entire Line in the [illegible] Stores, Dealers and on Direct Orders.

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[illegible] SPECIFICATIONS

- 2 32 bit VESA Local Bus Slots
- 16-bit ISA Slots
- 3.5" [illegible] bay
- CD-ROM or 5.25" HDD bay
- Ports for 2S, 1P, [illegible] Keyboard, VGA Monitor
- Internal Speakers
- Integrated 10/100 [illegible] 20W power supply
- 4.5"W x 14.0"D x 4.9"H
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Customer [illegible] Welcome
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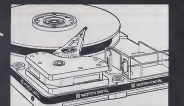

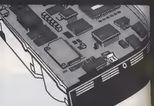

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FAST, EASY INSTALLATION

Anyone can sell you a hard drive. We sell easy to install storage solutions. We spend countless hours researching the best solutions, then create our quick precise installation guides for each kit.

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SAVE SOME SERIOUS BUCKS WITH OUR MEGA HUNDLES

IDE DRIVE BUNDLES		SCSI DRIVE BUNDLES	
420MB Drive, GSI-21 accelerator card	$319	1Gig Drive, 16Bit ISA	$829
420MB Drive, Local Bus Cache card	$382	1Gig Drive, Local Bus Cache Card	$1039
420MB Drive, GSI-21, 250MB Tape, 2 tapes	$463	1Gig Drive, 2Gig DAT, 1 tape	$1569
540MB Drive, GSI-21 accelerator card	$407	1Gig Drive, 32Bit Local Bus	$889
540MB Drive, GSI-21, 250MB Tape, 2 tapes	$565	1.7Gig Drive, 16Bit ISA	$1049
540MB Drive, Local Bus Cache card	$478	1.7Gig Drive, Local Bus Cache Card	$1239
1Gig Drive, GSI-21 accelerator card	$759	1.7Gig Drive, 2Gig DAT, 1 tape	$1789
1Gig Drive, GSI-21, 250MB Tape, 4 tapes	$899	1.7Gig Drive, 32Bit Local Bus	$1099
WIDE SCSI BUNDLES			
1Gig Drive, 32Bit EISA, PCI or VLB card	$1269	2Gig Drive, 32Bit EISA, PCI or VLB card	$1969

SyQuest

3 1/2" Removable Media Drives. The #1 storage solution of the 1990's. Hard drive speed, low cost per MB. Mounts is 3 1/2" or 5 1/4" bay. Great for unlimited upgradability, data archival, etc. 105MB 14.5ms, 64K buffer. 270MB 13.5ms, 128K buffer.

IDE Drive Bare 105 / 270	$239 / $409	SCSI Drive Bare 105 / 270	$279 / $429
with GSI-18 & 1 disk	$329 / $519	with Adaptec 1522 & 1 disk	$399 / $629
Portable external, attaches to		with Adaptec 1542 & 1 Disk	$529 / $759
printer port with 1 cartridge	$399 / $619	External for MacIntosh & 1 Disk	$399 / $629

gsi

GSI drive accelerators increase the data transfer rate of your IDE drive 30 to 80%. Works by enabling the drives Read Multiple & Write Multiple commands to greatly increase performance. We highly recommend these products for WD, Conner, Quantum, Seagate, Micropolis, Maxtor, & Fujitsu.

	Alone	w/Drive
GSI-21 Board supports 2 IDE, 4 floppy drives. Doubles QIC-80 tape drive speed	$65	$55
GSI-18 Board supports 2 IDE drives. Works in conjunction with MFM, RLL, etc.	$55	$45
GSI-32 Board same as -21 adds 2 16550 serial ports & 1 bi-directional parallel port	$139	$119
GSI MaxIDEA Software solution works on existing IDE configuration (requires less than 1K of memory). Includes performance benchmark test.	$34	$25

HARD DRIVES

CONNER

IDE			
210MB	14ms	CFS210A	$202
340MB	13ms	CFA340A	$261
420MB	14ms	CFS420A	$269
541MB	12ms	CFA540A	$374
1060MB	9ms	CFP1060A	$729
SCSI			
1060MB	9ms	CFP1060S	$719

Maxtor

IDE			
245MB	15ms	7245A	$249
345MB	14ms	7345A	$259
540MB	12ms	7546A	$358

MICROPOLIS

IDE			
1050MB	10ms	MC4110A	$725
1740MB	10ms	MC2217A	$925
SCSI			
1052MB	8.5ms	MC4110	$725
1740MB	10ms	MC2217	$925
3020MB	11ms	MC1936	$1999
SCSI-AV Audio / Visual tuned drives			
1000MB	10ms	MC2210AV	$795
1700MB	10ms	MC2217AV	$999
3000MB	11ms	MC1936AV	$2119

Seagate

IDE			
213MB	16ms	ST3243A	$199
260MB	16ms	ST3290A	$219
341MB	13ms	ST3391A	$267
540MB	12ms	ST3655A	$370
SCSI (WIDE SCSI also available)			
1690MB	8ms	ST11950N	$1469
2145MB	8ms	ST12550N	$1639
2148MB	9ms	ST12400N	$1399

WESTERN DIGITAL

IDE			
270MB	12ms	AC1270	$229
341MB	12ms	AC2340	$250
425MB	12ms	AC2420	$275
540MB	11ms	AC2540	$359
730MB	10ms	AC2700	$529
1083MB	10ms	AC31000	$739

HARD DRIVES

Quantum

IDE			
210MB	14ms	LPS210A	$199
270MB	12ms	LPS270A	$229
342MB	12ms	LPS340A	$269
541MB	12ms	LPS540A	$359
SCSI			
170MB	14ms	ELS170S	$199
270MB	12ms	LPS270S	$245
342MB	12ms	LPS340S	$272
541MB	12ms	LPS540S	$389
1080MB	10ms	IMP1080	$719
1440MB	9.5ms	IMP1440S	Call
2160MB	9.5ms	IMP2160S	Call

digital

2103MB	9ms	DSP3210	$1369
3500MB	11ms	DSP5350	$2469

IBM PS/1 PS/2 DRIVES

Complete solutions for your IBM. Larger sizes in stock!

	210MB	420MB	540MB
PS/1 386 & 486	$299	$399	$499
PS/2			
25, 30, 30-286	$299	$399	$499
35 & 40	$269	$369	$469
50 thru 95	$399	$499	$599

CONTROLLER CARDS

ADAPTEC	Alone	w/Drive
A1522BASIC 16Bit SCSI	$129	$109
A1542CBASIC 16Bit SCSI	$225	$215
A2742 EISA SCSI	$389	$369
A2842 VESA SCSI	$319	$299
FUTURE DOMAIN		
1680SVP 16Bit SCSI	$155	$139
QLOGIC		
VESA SCSI	$225	$209
PCI SCSI-2 and WIDE SCSI	$325	$309
ALPHA RESEARCH CACHING CARDS		
S425I 16Bit IDE	$99	$89
S475I 32Bit Local Bus IDE	$139	$129
S485I 32Bit PCI IDE	$229	$219
S425S 16Bit SCSI	$229	$219
S475S 32Bit Local Bus SCSI	$369	$359

Many other types of controllers in stock.

CD ROM DRIVES

NEC	CDR900	4X	180ms	$979
NEC	CDR510	3X	195ms	$389
Toshiba	XM3401	2X	200ms	$315
Toshiba	XM4101	2X	320ms	$219
Sony	CDU561	2X	295ms	$289
Teac	CD50	2X	265ms	$259

Pioneer External CD Changers (300ms)

DRM602X	6 disc	307KB/sec	$869
DRM604X	6 disc	612KB/sec	$1149
DRM1804X	18 disc	612KB/sec	$2059

MULTIMEDIA KITS

SCSI Drive, sound card (in retail pkg)

MV=Media Vision Pro Audio 16. MS=Media Vision Pro Studio 16 SB= Sound Blaster 16 SCSI. SA= Sound Blaster SCSI ASP.

	MV	MS	SB	SA
XM4101	$330	$350	$400	$430
CD50	$399	$429	$449	$489
CDU561	$429	$459	$469	$519
XM3401	$435	$455	$505	$535
CDR510	$509	$539	$579	$609
CDR900	$1119	$1149	$1159	$1199

CD ROM TOWERS

CD ROM Drive Towers - Multiple CD ROM drives in a single external enclosure. Great for networks, BBS, or business.

	2 Drive	4 Drive	7 Drive
XM4101	$579	$1259	$2249
CD50	$649	$1389	$2479
CDU561	$699	$1479	$2639
XM3401	$789	$1659	$2999
CDR510	$939	$1999	$3499
CDR900	$2119	$4339	$7489

BUNDLE SPECIALS WITH ANY CD DRIVE PURCHASE!
Free $25 ADI Photo CD processing coupon with each CD ROM Drive!
6 Title CD Bundle $69
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Caddies $5 Macintosh CD Driver $29
Altec Lansing ACS-100 Speakers $109

TAPE DRIVES

IOMEGA

250MB Tape Drive 5YR Warranty!
QIC-80 compatible, includes backup software & 1 FREE tape

	Alone	w/drive
Internal fits 3.5 or 5.25 bay	$159	$149
External for printer port	$319	$309

3 Pack of IOMEGA formatted DC2120 tapes $40 with any purchase!

SCSI Tape Drives - Kits include 16bit card, software & 1 tape

			Bare	Kit
750-1.5Gig	Exabyte	2501	$549	$739
2Gig	Conner	4320	$799	$969
2Gig	HP	35470	$929	$1049
4-8Gig	Conner	4324	$1119	$1329
4-8Gig	HP	35480	$1059	$1279
4-16Gig	Sony	SDT5000	$1099	$1299
4-16Gig	HP	C1533A	$1499	$1699

OPTICAL DRIVES

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128MB / 650MB / 1.3Gig $35 / $77 / $105

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Floppy Combo 1.2 & 1.4	$115	$105
Maxtor 105MB PCMCIA drive		$429
PCMCIA to SCSI adapter		$319
Desktop Docking Module! Mounts in 5 1/4" drive bay. Allows you to use any PCMCIA in your desktop		$159

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- HP Scanjet 2CX . $949
- HP Scanjet 2P $549
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- SHIPPING AND HANDLING NON REFUNDABLE
- ALL RETURNS SUBJECT TO A RESTOCKING FEE
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Single Light Source	Yes	Yes	Yes	Yes
Scan Window Size	8.5 x 14	8.5 x 14	8.5 x 14	8.3 x 11.7
Transparency Adapter	$499	$499	$699	Included
Auto Document Feeder	$399	$399	$399	N/A
PRICE	$499	$649	$999	$2999
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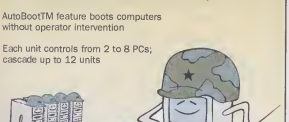

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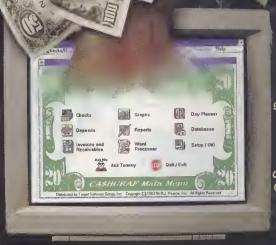

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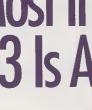

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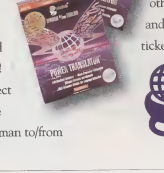

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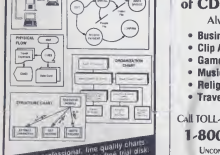

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PHOTOGRAPH BY DAVID FERRY

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88 LSS Special Edition / Oldsmobile / (800) 535-6537 / $23,295
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TripMaker / Rand McNally / (800) 627-2887 / $79.95
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ThinkPad 510CS / IBM / (800) 772-2227 / Price not yet determined
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Writing on the Road: Longer and heavier but better at deciphering your penmanship, Apple's Newton MessagePad 110 has three times the memory of the original Newton.

Newton MessagePad 110 / Apple Computer / (800) 709-7827 / $599
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Flashback / Norris Communications / (619) 679-1504 / $249
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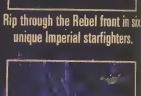

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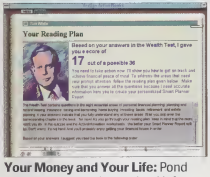
CD-RONWhite

CASH OR CHARGE?

Maybe it's the summer doldrums or a confluence of the stars, but this month we had a record number of CD-ROMs that wouldn't even run properly. Like any user, our response was to send them back. The ones that made it into this issue are true survivors—although euthanasia crossed our minds more than once.



Your Money and Your Life: Pond teaches you the things school left out.

JONATHAN POND'S PERSONAL FINANCIAL PLANNER ●●●●

Is all that money stuffed under the mattress disturbing your sleep? Do you think a CD belongs in a computer rather than a bank? If so, then you need Jonathan Pond's Personal Financial Planner.

Based on Pond's printed books, the disc has a few bonuses. Pond appears in videos to give additional advice—but like any talking head, that's no big deal. What you'll truly benefit from is the customized reading list: By answering a few questions at the outset, you get to skip the chapters you don't need. (Why couldn't we have had something like this in college?) And by answering other questions as you read, you get advice tailored to your age, goals, income, and family situation.

The disc doesn't tell you which stocks or mutual funds to buy, but it does suggest how to balance your investments and how much you should be saving to retire in style or send the kiddies to college. The interface needs a little fixing, though: If you enter conflicting information in different questionnaires, Personal Financial Planner is only smart enough to catch the mistake once—it doesn't locate the conflict in the second questionnaire. Once that's fixed, this disc will be hard to fault.

Jonathan Pond's Personal Financial Planner / Vertigo Development Group / (800) 688-4750 / $49.95
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GETTYSBURG MULTIMEDIA BATTLE SIMULATION ●●●●

For any Civil War buff, this CD is worth your PC's weight in gold. The Gettysburg Multimedia Battle Simulation will keep the war alive as long as there's a CD-ROM drive still standing. The disc is half history and half game. If you just want to learn how the battle was fought, sit back and watch the troops' movements on a map, read a written log, and listen to the narration by Shelby Foote, whose stellar PBS documentary on the Civil War won ratings by the million; you can even watch scenes from the movie *Gettysburg*. But if you think you can top the generals of the North or South, take command yourself—direct troops, try out tactics, and see if you can change the course of history.

Address Gettysburg: Four score and seven hours later, it's still absorbing.

Gettysburg Multimedia Battle Simulation / Swfte Int'l / (800) 237-9383 / $89.95
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SPORTS ILLUSTRATED 1994 MULTIMEDIA SPORTS ALMANAC ●●●

You know what's really nice about the Sports Illustrated 1994 Multimedia Sports Almanac? You can do a search of the entire disc and find only one reference to Tonya Harding! But wait. How could a 1994 sports review miss the Tonya story and, for that matter, the entire 1994 Winter Olympics? The answer is that, despite the title, this CD covers 1993.

Nonetheless, the almanac is a jaunty look back at 1993 sports, including video highlights from the big pro events, enough charts, statistics, and trivia to satisfy the most obsessed armchair athlete, and the full text of an entire year of *Sports Illustrated*. If you're the type who has three TVs in the same room tuned to three different games on Sunday, you'll love it. Our only disappointment was the bloopers video. Choppy editing combined with the choppy replay of Windows video meant that we had a hard time figuring out what many of the bloopers were about.

Sports Illustrated 1994 Multimedia Sports Almanac / StarPress Multimedia / (800) 782-7944 / $69.95
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●●●●● *Ambrosia of the CD gods.* ●●●● *Get some bread—it's good enough to eat.*
●●● *Fine fare, if the subject's your cup of tea.* ●● *An acquired taste.* ● *A bad taste.*

PHOTOGRAPH BY JAMES McGOON

CD-RONWhite

MOVIES ON TV AND VIDEOCASSETTE ○○○

OK. We lied. A few issues back we vowed never to review another CD that translated the text of a book to digital form without taking advantage of the multimedia possibilities of CD-ROM. The reason we're making an exception this time is for the benefit of fellow couch potatoes for whom Steven H. Scheuer's paperback *Movies on TV and Videocassette* is a bible. It's the most complete listing of movies you'll find anywhere, and the terse descriptions and star ratings are right on the money.

Sure, this CD's search engine is not the best, and unlike Microsoft Cinemania and Mega Movie Guide, there are no video or sound clips—or even stills. But for fast recommendations—and warnings—it's still the authority to turn to.

Movies on TV and Videocassette / Compton's NewMedia / (800) 862-2206 / $39.95
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PROFESSOR MULTIMEDIA ○○

So you're sitting in front of your new multimedia PC wondering what the fuss is all about—what is multimedia anyway? Slip in Professor Multimedia for a quick explanation of how sound, video, and animation give fresh life to computing. This disc is simple enough to be called Schoolteacher Multimedia, but it explains the subject in a way that only a multimedia program can.

One gripe: The disk is not a very good example of how a multimedia interface should work. You can't pause the video, back up, or bail out if you've seen enough. Any program that uses video should have these controls. But perhaps this is just Professor Multimedia's way of making a point through a negative example. (That's right, class. Glad you were paying attention.)

Professor Multimedia / Individual Software / (800) 822-3522 / $59.95
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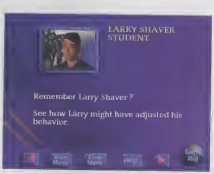
CONNECT FOR SUCCESS ○○

You know those management training videos the human resources people unleash on you two or three times a year, the ones with the really bad acting, a condescending tone, and repetitious lessons—all presented at the pace of a snail on ludes? Well, now you don't have to wait for HR to shanghai you into three hours of tedium. Do it yourself with Connect for Success.



Influence People: Learn from Larry's social blunders in Connect for Success.

This Windows CD is geared to teaching you how to deal better with others. For example, you learn that to make a better impression you should use light humor and ask for advice rather than bragging about your own ideas. No surprises there. We'd be tempted to dismiss this CD—except that we've dealt with people who don't know any of this. Now, if HR would identify the *real* jerks and make them watch this CD, Connect for Success would get a standing ovation from the rest of us.

Connect for Success / Wilson Learning Corp. / (800) 247-7332 / $69.95
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QUICKTIME: THE CD ○○○

There's absolutely no practical value to QuickTime: The CD, but it's a lot of fun. The two-disk set contains the winners of the 1992 and 1993 QuickTime Film Festivals. Some of the animations and videos are funny, and others are just plain weird. We didn't find one among them that would do for a multimedia presentation to important clients, but who cares? This is a good CD for finding out how much you can do with QuickTime for Windows. If you need some inspiration or a decent chuckle, here it is.

QuickTime: The CD / Sumeria / (415) 904-0800 / 1992-1993 edition, $64.95; 1994 edition, $49.95
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KNOW YOUR WATERFOWL ○○○

Like English people and grandmothers, bird fanciers are regarded by most of us as quaint and essentially harmless. This is also a pretty good description of Know Your Waterfowl.

The contents of this Windows CD aren't half bad—if you're into ducks and geese. The videos and stills of fowl in flight are fine, as are the audio samples. If you fancy yourself a waterfowl expert, take the dandy little quiz. But if mergansers aren't your thing, take heart: Now that waterfowl rate their own multimedia disc, your pet pastime can't be far behind.

Know Your Waterfowl / Axia Int'l / (403) 262-2942 / $89.95
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NORMANDY: THE GREAT CRUSADE ○○○○

Oh, why couldn't history have been like this when I was in school? With its newsreels, radio recordings, and photographs, Normandy: The Great Crusade proves that learning history can be more interesting and immediate than a prime-time eye-witness news report.

This disc does an excellent job of bringing the Discovery Channel's documentary to your PC. Explore D-Day through maps or on-the-scenes newsreels, read soldiers' letters, and listen to narration that brings it all together. Immerse yourself in the mood of the home front, too—right down to the latest swing tune. For people who know of Omaha Beach only as a textbook reference, this is a great CD.

Normandy: The Great Crusade / Discovery Communications / (301) 986-0444 / $49.95
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War Is Hell: Discovery's excellent documentary sets D-Day in perspective.

PC Computing (ISSN 0899-1847) is published monthly by Zff-Davis Publishing Company, a division of Zff Communications Company, One Park Ave., New York, NY 10016. Second-class postage paid at New York, NY 10016 and at additional mailing offices. Postmaster: Send address changes to PC Computing, P.O. Box 58229, Boulder, CO 80322-8229. Printed in the U.S.A. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 278513. The Canadian GST registration number is R123669673.

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Tolls for Thee?

Hey, I finally have a boring, outdated title that fits in a computer magazine. I'm knuckling under. It has a meaningless literary reference. It's even a question, so my editor thinks you're automatically involved. Now that I've pleased the new editor, I will write about Teri Hatcher. "What has happened to Uma Thurman?"—I still mentioned her, but this column is about Teri. She's on *Lois & Clark*, a television program about Superman in the early years when he was part Japanese. She plays Lois Lane, the sexual tension.

I did a guest shot on *Lois & Clark*. (Sorry, it's my job. I had my reasons, so shut your cake hole.) Teri seemed to think I was crazy and a little dangerous (I'm fine with that), but she warmed up. She invited me to her house. Does she invite all the guest stars over? No. Were we having an affair? No—look at my picture and think—she can do better than a big ugly son of a bitch with a square head. Can I help her career? No, I can barely keep mine going. The reason—she thought I could get her "online." That was her phrase, "online." The times they are a-changin'.

She invited me because I know people like you! Get it? It's more proof that we have won. The beautiful people want to be us. Even our Deadhead vice president is talking about how hip it is to be on the Internet (like he would know hip if it bit him. By the way, does anyone who's really hip use the word hip?) Even I've known the Net is great for nine years and I have buddies who have been on since there was only one "Rob." Everyone's heard that "online" is a wonderful place, and Hollywood isn't the most efficient way to get there. It's now better to know a geek. And Hollywood stars aren't the best way to go.

I didn't get her online. I told her to call my geek buddy and he'd tell her what modem to buy and how to get on CompuServe. He might have gotten a little kick out of Teri and her Hatchers, but she never called. She was hoping I had deeper access—the Internet. I *was* on the Internet, but I got messages every day saying, "Are you really that guy?" I had no witty comeback, so I got off the Internet. CompuServe fulfills all my needs and I'm just a number there.

Teri will get on the Internet, and she might not have to stoop to a "not-quite-the-Internet" site. She might not have to drop coin. She will get a set of keys to our clubhouse.

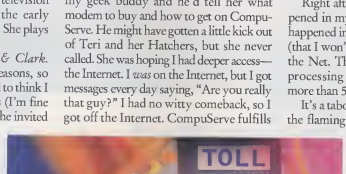
The Internet grew out of ARPAnet, for research and defense. Paid for by government and universities for government and university work. Alt.sex.bondage was a perquisite. The Teri Hatchers are doing neither defense nor research, and they just don't seem to be satisfied on CompuServe where they belong. There are a lot of free rides on government and universities. The government seems to have lots of money, but hey—it's our goddamn money.

Right after Teri wannabe-Hacker happened in my life, the Green Card scandal happened in the big world. Some law firm (that I won't advertise here) *advertised* on the Net. They sent out junk mail about processing citizenship applications to more than 5,000 newsgroups.

It's a taboo to advertise on the Net, and the flaming hit Fahrenheit 451. Hackers started monkey-wrenching—the ambitious lawyers got 30,000 answers right away, mostly protesting the ad. They were swamped by some and locked out by others. The battle was raging. As the smoke from the flame cleared, the lawyers declared it successful (wasn't it Lee Harvey Oswald who said there's no such thing as bad press?) and said they'd do it again (man, lawyers are less affected by hostility than opening-act DJs).

So, what's going to happen? If the Net wasn't free (I know it isn't really free—we all pay and people pretend it's free), this wouldn't happen. If people wanted to advertise by bulk mail they would pay, and if one didn't want to get advertising, one would pay—everyone would be happy.

Once Teri Hatcher wants on the Net, you either have to pay, or you have to have ads. It's over—there's no such thing as a free e-lunch.



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